MARINE REVIEW.

VOL. V. CLEVELAND, OHIO, THURSDAY, MARCH 17, 1892. No. 12.

Supervising Inspectors of Steam Vessels.

An engraving on this page is a reproduction of a photograph of the board of supervising inspectors of steam vessels, taken at the recent meeting in Washington. The power and duties of the board are understood by the readers of the REVIEW. Its regular meetings are held in Washington once a year beginning with the third Wednesday in January. The board is charged with the enforcement of laws relating to steam vessels, and its members, who have charge of a large force of local inspectors, have headquarters in leading shipping districts throughout the country. They are appointed by the president of the United States and it is intended to have them selected in all cases according to fitness, either as masters or engineers, for the calling. The supervising inspectors are paid a salary of $3 000 and expenses, while that of the inspector general, James A. Dumont, is $3,500. Mr. Dumont has held the position of inspector general for fourteen years. The faces of two members of the board, Alexander McMaster of Buffalo and C. H. Westcott of Detroit, are familiar to lake men. They are the supervisors of the districts comprising the lakes.

A report of the proceedings of the last annual meeting of the board has just been printed. Some of the amendments in the rules apply to the lakes, and chief among them is the provision that "any chief engineer of condensing lake, bay or sound steamer, who has performed the duties of chief engineer on compound engines for a period of one year, shall be entitled to an examination for position of first assistant of ocean steamers, and if such examination is satisfactory to the examining officer the applicant shall receive a license as first assistant engineer of ocean steamers." Another amendment provides that "before making general repairs to a boiler of a steam vessel, the engineer in charge of such steamer shall report, in writing, the nature of such repairs to the local inspector of the district wherein such repairs are to be made."

Boiler makers will be interested in an addition to section 34, rule 2, which says: "When holes exceeding 6 inches in diameter are cut in boilers for pipe connections, man and hand hole plates, such holes shall be re-enforced with wrought iron or steel rings of equal area to the material cut from such boilers." Under the old rule cast iron might have been used for re-enforcement rings of this kind but the amendment calls for wrought iron or steel rings. Other amendments to this section are as follows: "All copper steam pipes of a diameter of 5 inches and under shall have bronze or brass composition flanges securely brazed to the pipe; when over 5 inches in diameter the flanges shall be of bronze, or brass composition, securely brazed or soldered and fastened in addition with rivets to the pipe; on lap-welded iron or steel pipes the flanges may be made of boiler plate of either iron or steel, when securely attached to steam pipe by rivets, and in no case will the use of cast iron or cast steel flanges be allowed on such pipes."

J. Ingle, Evansville, Ind. C. H. Westcott, Detroit. J. W. Oast, Norfolk, Va. Matt O'Brien, New Orleans. J. D. Sloan, St. Paul. H. S. Lubbock, San Francisco.
John Fehrenbatch, Cincinnati. Geo. H. Starbuck, N.Y. City. Jas. A. Dumont, Washington. A. McMaster, Buffalo. Frank Burnett, St. Louis.

BOARD OF SUPERVISING INSPECTORS, UNITED STATES STEAMBOAT INSPECTION SERVICE.

[The illustration above is from the Illustrated Buffalo Express, copyrighted by Geo. E. Matthews & Co., 1892.]

Supplement MARINE REVIEW, Cleveland, O.

Tonnage of the Cleveland Vessel Owners' Association.

LIST OF VESSELS, SEASON OF 1891.

	NUMBER.	GROSS TONS.
STEAMERS	166	254,544
CONSORTS AND SAIL	154	106,863

STEAMERS.

Name of Boat.	Gross Tons
Aurora	2282
Australasia	1829
Avery, W A	1294
Alpena	369
Arnold, B. W	944
Adams, Tom	1811
Alcona	990
Brown, Fayette	1741
Business	986
Bulgaria	1889
Britannic	1021
Briton	2349
Bradley, Chas. H	804
Castalia	2513
Caledonia	1847
City of Cleveland	1610
Chisholm, H	1775
Cambria	1878
Colonial	1502
Continental	1506
Chisholm, Wm	1581
Cormorant	1200
Cumberland	1601
Columbia	1374
Corsica	2364
Corona	2408
Craig, John	2044
Christie, T. S	769
Cherokee	1003
Coffinberry, H. D	858
Devereux, J. H	1619
Elfinmere	1054
Everett, A	1088
Egyptian	1430
Elphicke, C. W	2059
Eddy, Charles A	2076
Eddy, John F	1678
Fay, J. S	1221
Fairbanks, N. K	980
Forest City	1236
Frontenac	2004
Forbes, Kittie M	969
Folsom, A	941
Farwell, Jesse H	1201
Green, C. H	920
Glidden, John N	1323
Gilchrist, J. C	1827
Grover, M. B	1996
Gladstone	2112
Germanic	1131
Gogebic	1681
German	2349
Grecian	2349
Gilcher	2392
Griffin	1922
Hale, E. B	1186
Havana	1041
Hackett, R. J	1129
Hesper	1859
Hope, George T	1559
Hadley, G. G	2073
Hurlbut, Chauncy	1010
Hoyt, Colgate	1253
Harper, John	1952
Italia	2036
Iron King	1703
Iron Chief	1154
Iron Duke	1152
Iron Age	1114
Johnson, H. J	1713
Joliet	1922
Kirby, S. R	2339
Kershaw, Chas. J	1324
Kelley, Fred	927
Ketchum, V. H	1661
Keystone	723
Kalkaska	680
Kaliyuga	1942
La Salle	1922
Langell, S	845
Louisiana	1753
Lockwood, J. C	2279
Lockwood, C. B	2139
Mariska	2326
Manola	2326
Mather, S	1576
Macy, S. J	752
Missoula	1927
Minch, Philip	1988
Morley, Geo. W	1046
Moore, J. W	1961
Monahansett	573
Marquette	1343
Miami	229
Maruba	2311
Matoa	2326
Marina	2326
Masaba	2326
Nahant	1204
Neosho	1983
Neshoto	2255
Norman	2305
Newaygo	906
Nimick, Alex	1969
Niko	1040
Olwell, M	925
Outhwaite, J. H	1304
Oregon	944
Onoko	2164
Olympia	2066
Pasadena	1761
Peck, E. M	1809
Progress	1596
Pickands, James	1546
Presley, George	1936
Pontiac	2298
Pratt, P. P	1927
Pease, E. S	721
Queen of the West	819
Quito	1395
Ralph, P. J	965
Ranney, R. P	1392
Republic	2349
Rust, D. W	884
Raleigh	1206
Rhodes, R. R	1576
Richards, Rube	816
Roumania	1837
Roman	2349
Roby, G. W	1846
Superior	964
Sheldon, Sarah E	907
Sparta	1017
Spencer, Geo	1361
Spokane	1742
Swain, V	955
Siberia	1618
Specular	1741
Sitka	1741
St. Paul	760
Sheriffs, Jim	841
Smith, Ed	748
Saxon	2349
St. Lawrence	1437
Servia	1425
Sauber, W. F	2053
Sibley, Hiram W	1500
Spinner, F. E	1003
Schuck, R. E	1868
Tower, C., Jr	1825
Tuttle, H. A	1585
Tuttle, H. B	845
Townsend, Oscar	1038
Viking	1117
Vienna	1005
Vulcan	1759
Waverly	1104
Wallula	1924
Wetmore, W. L	1217
Wocoken	1400
Wallace, R	1190
Western Reserve	2392
Williams, Geo. F	1888
Wade, J. H	1863
Wawatam	1857
Yakima	1986

Total steamers 166....254,544

CONSORTS AND SAIL.

Name of Boat.	Gross Tons
Adams, Geo. W	1444
Alverson, H. D	761
Ash, Annie M	1259
Arenac	521
Allegheny	663
Arthur	335
Alta	936
Adriatic	916
Baldwin, H. P	495
Bell, Mattie C	769
Bradley, A	934
Brown, F	553
Butts, L. C	769
Brunette	738
Bruce, B. F	729
Brown, H. H	834
Brightie	600
Beals, E. P	373
Barnes, C. C	582
Benson, C. B	298
Barlum, J. J	1185
Cobb, Ahira	945
Camden	694
Crosthwaite, W. S	673
Col. Cook	266
Columbian	356
Clint, D, K	729
Checotah	658
Card, J. F	276
Chippewa	875
Chandler, Zack	726
Churchill	1010
Case, J. I	828
Canton	321
Dunn, S. H	500
Ely, S. P	627
Eddy, N. A	1270
Ewen, Frank D	883
Estelle, H. A	310
Ellsworth, Lem	340
Foster, S. H	672
Fontana	1163
Fort, D. G	339
Fitzhugh, Henry	316
Gilmore, J. E	290
Genoa	730
Gerlach, Eliza	271
George	790
Georger	825
Godfrey, Jeremiah	653
Galatea	825
Grover, A. P	246
Gawn, Thomas	550
Hartford	323
Helena	863
Holland, Grace	629
Helvetia	793
Hutchinson, E. C	736
Hawgood, H. A	1276
Hanscomb, Belle	294
Home, Wm	305
Houghton, G. G	332
Hutchinson, John M	980
Ishpeming	418
Ironton	785
Itasca	344
Iron Queen	1384
Iron State	1127
Iron Cliff	1116
Iron City	648
Johnson, C. H	332
Kent, H. A	771
King, C. G	457
Kimball, S. H	318
Kitchen, J. B	287
Kelley, Edward	776
Locke, P. B	285
Leighton, F. C	328
Martin, M	568
Mitchell, M. B	963
Masten, J. G	620
Moonlight	777
Marsh, P. S	543
Martin, John	937
Magnetic	1676
Minch, Sophia	635
Morse, F. A	592
McGregor, Wm	732
Mineral State	294
Michigan	1290
Maumee Valley	213
Moravia	1067
Mitchell, O	320
Magee, John	331
Massasoit	842
Negaunee	640
North West	1017
Norris, A. B	628
Nelson	766
One Hundred and One	456
" " " Two	1192
" " " Three	1192
" " " Four	1295
" " " Five	1295
" " " Seven	1295
Olive-Jeanette,	1272
Palmer, E. B	277
Paige, Joseph	625
Pelican	813
Perew, Frank	524
Pennington, B. L	1142
Planet	473
Penokee	332
Queen City	675
Quayle, Thomas	893
Rogers, A. J	340
Rhodes, D. P	937
Red White and Blue	447
Richards, May	511
Richards, H. C	699
Rutter, J. H	1224
Rounds, W H	308
Sandusky	837
Sumatra	845
Sheldon, Thos. P	699
Sonsmith, Rosa	766
Shaw, John	928
Smith, A	580
Shawnee	571
Scotia	903
Schuette, John	300
Sigel, Gen. Franz	317
St. Lawrence	281
Selkirk	311
St. Peter	289
Southwest	292
Tokio	1385
Tasmania	979
Twin Sisters	806
Teutonia	594
Verona	728
Wallace, D	1088
Williams, E. R	293
Winslow, R	885
Warmington, G. H	559
Wadena	1076
Warner, M. R	699
Winslow, Kate	736
Wall, Charles	629
Wells, Hattie	376
Watson, S L	606
Wilson, Mabel	1224
Woolson, Mary	708
Wilcox, M. J	377

Total schooners 154..106,863

Lighted by the FISHER ELECTRIC COMPANY, Detroit.

Supplement to THE MARINE REVIEW, Cleveland, O.

DETROIT AND CLEVELAND STEAMERS—PASSING AT NIGHT.

LATE APPOINTMENTS OF MASTERS AND ENGINEERS—SEASON 1892.

AMERICAN STEEL BARGE COMPANY, WEST SUPERIOR, WIS.: Steamers—Colgate Hoyt, Capt. W. H. Kelly, Engineer Gilbert Newton. A. D. Thomson, Capt. A. P. Chambers, Engineer Earnest Sampson; E. B. Bartlett, Capt. S. P. Goodale, Engineer Albert Edgar; Thomas Wilson, Capt. John McArthur, Engineer J. E. McSweeny; Samuel Mather, Capt. J. H. Smith, Engineer Brown; James B. Colgate, Capt. W. W. Smith, Engineer R. S. Blauvelt. Barges—101, Capt. B. S. Jones; 102, Capt. E. Peabody; 103, Capt. R. W. Hayes; 104, Capt. Thomas A. Green; 105, Capt. James Barr; 107, Capt. William S. Hoag; 109, Capt. John Gillies; 111, Capt. E. Emanuelson; 115, Capt. Thomas Tobin; 116, Capt. Gus E. Atkinson; 117, Capt. Wilber Holdridge; 118, Capt. James Leahy.

ANCHOR LINE, BUFFALO, N. Y.; Steamers—India, Capt. F. D. Osborne; China, Capt. C. Mason; Japan, Capt. Robert Smith; Gordon Campbell, Capt. George Graser; Susquehanna, Capt. M. Riley; Clarion, Capt. Joseph Corcoran; Lehigh, Capt. H. A. Sisson; Philadelphia, Capt. A. E. Huff; Lycoming, Capt. L. Wright; Alaska, Capt. M. Rowan; Conemaugh, Capt. H. O. Miller; Conestoga, Capt. F. Bloom; Delaware, Capt. P. O'Neil; Juniata, Capt. Dall Ryder; Wissahickon, Capt. H. Durker; Codorus, Capt. John McCarthy; Chuylkill, Capt. John Doherty; Mahoning, Capt. C. Christy.

ADAMS, THOMAS, DETROIT, MICH.: Steamers—Tom Adams, Capt. D. Nicholson, Engineer James Kelly; Jesse H. Farwell, Capt. D. Duncanson, Engineer W. T. Cullen; F. E. Spinner, Capt. George B. Kendall, Engineer T. J. Kelley. Schooners—J. H. Rutter, Capt. S. L. Ketchum; Shawnee, Capt. John Eberlein; Godfrey, Capt. D. W. Matteson.

BRADLEY, C. H., BAY CITY, MICH.: Steamer C. H. Bradley, Capt. C. H. Marsden, Engineer Edgar Arnold. Schooners—Mary Woolson, Capt. Wallace Allen; Brightie, Capt. James Brines; Goshawk, Capt. Michael Nagle.

BUCKLEY, EDWARD, MANISTEE, MICH.: Steamer Edward Buckley, Capt. Charles Gnewuch, Engineer R. Winkler.

DAVIDSON TRANSPORTATION COMPANY, WEST BAY CITY, MICH.: Steamers—City of London, Capt. M. Madden; City of Berlin, Capt. Cox; City of Glasgow, Capt. Van Lehman; Monohansett, Capt George W. Pardee; Oneida, Capt. Thomas E. Black. Schooners—Celtic, Capt. George W. Starkey; Harold, Capt. W. R. Newton.

DRAKE, M. M., BUFFALO, N. Y.: Steamers—Brazil, Capt. A. B. Drake; America, Capt. Gibson.

ELPHICKE, C. W. & CO., CHICAGO, ILL.: Steamers—Josephine, Capt. John Massey, Engineer H. Coba; Ohio, Capt. S. O. Marsh, Engineer George Van Every. Schooners—C. P. Minch, Capt. Hoffman; Thomas L. Parker, Capt. ———— .

FRIES, VALENTINE, MILAN, O.: Steamers—William Edwards, Capt. W. W. Collins; Golden Age, Capt. John C. Floor. Schooners—Charles Foster, Capt. Dan Stalker; Marion W. Paige, Capt. J. W. Wilson; Atmosphere, Capt. Angus McGougan.

GILCHRIST, J. C., CLEVELAND, O.: Steamers—W. H. Gilcher, Capt. L. H. Weeks, Engineer S. B. Jones; R. E. Schuck, Capt. George Bell, Engineer James Walsh; John Craig, Capt. J. L. Weeks, Engineer James Mitchell; J. C. Gilchrist, Capt. Frank Rae, Engineer John Parks; Cumberland, Capt. C. T. Gunderson, Engineer Birney; Columbia, Capt. Olif Olson, Engineer C. N. Allbee; Hiawatha, Capt. C. C. Towsley, Engineer F. Fitzgerald; Oregon, Capt. F. C. Goodell, Engineer Walter Stokes; Waverly, Capt. Henry Moody, Engineer Schnell. Schooners—H. D. Alverson, Capt. H. Gunderson; B. F. Bruce, Capt. Theodore Peterson; W. S. Crosthwaite, Capt. John Robinson; S. H. Foster, Capt. Thomas Harbottle; Verona, Capt. John Farwell.

GOODRICH TRANSPORTATION COMPANY, CHICAGO, ILL.: Steamers—Virginia, Capt. ————, Engineer G. P. Roth; Indiana, Capt. E. Dorsey, Engineer R. Flint; City of Racine, Capt. J. M. Gee, Engineer John Durr; Atlanta, Capt. A. W. Rosman, Engineer B. Beerman; Menominee, Capt. H. E. Stines, Engineer————; City of Ludington, Capt. John Raleigh, Engineer J. Bushman; Chicago, Capt. George Wittie, Engineer Felix Nider; Muskegon, Capt. A. Gallagher, Engineer T. E. Dorey.

GRUMMOND'S MACKINAC LINE, DETROIT, MICH.: Steamers—Depere, Capt. Thomas Meikleham, Engineer John Bloom; Flora, Capt. K. Finlayson, Engineer William Campbell; Atlantic, Capt. J. R. Jones, Engineer John Johnson.

HART'S STEAMBOAT LINE, GREEN BAY, WIS: Steamers—Fannie C. Hart, Capt. H. W. Hart, Engineer Jule Schram; Eugene C. Hart, Capt. C. B. Hart, Engineer John Valier; C. W. Moore, Capt. Wm. Baptist, Engineer James Dunlap; Welcome, Capt. P. S. Roulette, Engineer George Coulter.

JOHNSON, H. J., CLEVELAND, O.: Steamers—H. J. Johnson, Capt. John Thompson, Engineer Anthony; V. Swain, Capt. Beneteau; Business, Capt. Robert Kerr. Schooner Helvetia, Capt. Wm. Packer.

LACKAWANNA TRANSPORTATION COMPANY, BUFFALO, N. Y.: Steamers—Lackawanna, Capt. Joseph Hulligan, Engineer W. B. Davis; Scranton, Capt. James Green, Engineer C. Van Evry; Grand Traverse, Capt. Henry Murphy, Engineer E. A. Carter; Russia, Capt. Frank Weinheimer, Engineer W. Brown; Florida, Capt. P. J. Kenney, Engineer George Wise; Wyoming, Capt. Robert Drury, Engineer J. Hess; Newburg, Capt. Isaac Bain, Engineer F. A. Baker.

LEHIGH VALLEY TRANSPORTATION COMPANY, BUFFALO, N. Y.: (Appointments unofficial.) Steamers — Saranac, Capt. J. M. Todd; Tuscarora, Capt. John Johnson; E. P. Wilbur, Capt. J. A. Brown; Tacoma, Capt. James Todd; Oceanica, Capt. W. A. Ashley; H. E. Packer, Capt. William Williams; Fred. Mercer, Capt. T. Rahill; Seneca, Capt. Thomas Burton; R. A. Packer, Capt. A. J. Talbott; Cayuga, Capt. P. Riley.

MERCHANT'S LINE, TORONTO, ONT.: Steamers—Persia, Capt. John H. Scott, Engineer Alex. Ramsey; Ocean, Capt. J. T. Towers, Engineer Robert Black; Purser, Capt. John Malcolmson, Engineer John Harrington; Alma Munro, Capt. T. Brown, Engineer W. Milne; Cuba, Capt. J. C. Hume, Engineer W. Kennedy; Celtic, Capt. Oliver Patenande, Engineer Ed. Taylor; Lake Michigan, Capt. John Clifford, Engineer Neil Kirkpatrick; St. Magnus, Capt. Medge, Engineer J. A. Free; L. Shickluna, Capt. H. O. Jackson, Engineer W. Cunningham.

MILLER, MILLS & DONALDSON, BUFFALO, N. Y.: Steamers—Florida. Capt. P. J. Kenny, Engineer George Wise; Wyoming, Capt. Robert Drury, Engineer John Hess; Robert Mills, Capt. Alex. Clark, Engineer John Leahey; Cuba, Capt. Robert Young, Engineer Fred. Fitzgerald.

MATTHEWS LINE, TORONTO ONT.: Steamers—Niagara, Capt. James Morgan, Engineer Isaac Boyd, Clinton, Capt. M. Troy, Engineer James Bracken. Schooners—Emerald, Capt. John Philp; Laura, Capt. S. C. Malcolmson; Clara Youell, Capt. George Philp; Lisgar, Capt. H. McClory; Grimsby, Capt. N. R. Maitland.

OGDENBURG TRANSIT COMPANY, OGDENSBURG, N. Y.: Steamers—W. J. Averill, Capt. William D. Wait, Engineer Harris Higgens; W. L. Frost, Capt. D. Murphy, Engineer Robert Chestnut; H. A. Haskell, Capt. W. H. Williams, Engineer R. D. Houghton; James Langdon, Capt. Harvey Brown, Engineer John Phillips; F. H. Prince, Capt. D. A. Kiah, Engineer Thomas Leahan; A. McVittie, Capt. William Rollo, Engineer Morris Gore; Governor Smith, Capt. W. S. Shay, Engineer James Turnbull; H. R. James, Capt. James Owen, Engineer D. G. Costello.

PARKER, L., AU SABLE, MICH.: Steamer Richard Martini, Capt. Thos. Van Stan, Engineer J. D. Budd.

RECOR, E. C., ST. CLAIR, MICH.: Steamers—Mark Hopkins, Capt. L. A. Lyons, Engineer George W. Curtiss; F. W. Fletcher, Capt. H. D. Moore, Engineer William Brake; Huron City, Capt. Thomas Currie, Engineer———— .

SHAW, JOHN, BAY CITY, MICH.: Steamers—E. C. Pope, Capt. H. Zealand, Engineer R. Hill; C. A. Eddy, Capt. H. L. Shaw, Engineer M. Owen. Schooner Newell A. Eddy, Capt. T. W. Manuel.

UNION STEAMBOAT COMPANY, BUFFALO, N. Y.: Steamers—Chemung, Capt. Walter Robinson, Engineer Charles Wall; Owego, Capt. John Byrne, Engineer H. C. Jordan; Tioga, Capt. A. A. Phelps, Engineer John Mayberry; H. J. Jewett, Capt. B. Bordeaux, Engineer George Fritsche; Rochester, Capt. W. P. Garden, Engineer N. Johnson; New York, Capt. J. M. Clossey, Engineer Joseph Howlett; Avon, Capt. J. Frawley, Engineer F. Colton; Portage, Capt. James Jackson, Engineer George Haig; Nyack, Capt. Thomas Judge, Engineer Alex. Jones.

VANDALIA RAILWAY LINE, WEST BAY CITY, MICH.: Steamers—Soo City, Capt. Bryon Armstrong, Engineer Thomas Reese; Minnie M., Capt. James Mondon, Engineer Adolph LaFranier; Lora, Capt. M. J. Driscoll, Engineer M. King; Ossifrage, Capt. A. G. Aldrich, Engineer Louis Gelinas.

WESTERN TRANSIT COMPANY, BUFFALO, N. Y.: Steamers—Albany, Capt. A. J. McDonald, Engineer M. J. Laney; Arabia, Capt. Patrick Shea, Engineer Patrick Welch; Badger State, Capt. James Kennedy, Engineer J. W. Brooks; Boston, Capt. Donald Gillies, Engineer S. B. Muirhead; Buffalo, Capt. Dugald Buie, Engineer William McNulty; Chicago, Capt. F. J. McCabe, Engineer F. A. Miller; Commodore, Capt. R. D. Gardner, Engineer Moses Trouton; Empire State, Capt. John Cassin, Engineer George Hale; Harlem, Capt. Frank Williams, Engineer J. N. Gregory; Hudson, Valentine Jones, Engineer Henry Hess; Idaho, Capt. G. W. Bryce, Engineer James Anderson; McCormick, (steam lighter at Chicago), Capt. M. A. Huntley, Engineer L. F. Monroe; Milwaukee, Capt. Michael Folan, Engineer L. G. Gebhard; Montana, Capt. Alva Shaver, Engineer William Tibby; Syracuse, Capt. J. H. Dissett, Engineer G. W. Phillipe; Vanderbilt, Capt. Robert Murray, Engineer Fred Hale.

☞ *Paste this to Supplement issued March 10th, and the whole will be a complete list of the larger fleets engaged in the Lake trade.*

CHICAGO LAKE INTERESTS.

WESTERN OFFICE, MARINE REVIEW,
No. 210 So. Water Street, CHICAGO, Ill., Mar. 17.

Over a million bushels of corn was poured into the holds of vessels in Chicago river this week. Rates were 3½ @ 3¾ cents storage and freight to Buffalo. The business was done so quietly that few suspected its volume until it appeared in the visible supply statement of the grain afloat. At the same time the eastbound shipments of grain by rail fell off materially. Many think that the winter fleet will now be filled up rapidly, and that by the opening of navigation the boats will all have loads without a break in rates.

The people who are backing the scheme for whaleback steamers for World's fair transportation have been quietly offering stock in the company to outsiders. The stock subscriptions are to be good if the company obtains the exclusive privilege of landing at the World's fair docks, otherwise all is "off." The generosity of whaleback magnates in thus letting their friends in on the ground floor is truely astonishing. They are willing to advertise their boats, even if it does cost their friends a pretty penny.

Some people in Chicago have contended that the 20-foot channel would prove a body blow to the port of Chicago,and that the port of South Chicago would be the legatee of this city's grain trade. Only through the building of docks on the lake front, they say, can Chicago secure a benefit from this improvement. They have urged that 20 feet of water in Chicago river is impossible. The tunnels and the building foundations prevent it. The limit in a good stage of water is not over 16 feet. If there be 20 or even 18 feet of water on the great lakes, and only 16 feet in Chicago river, vessels can not carry full loads of grain from here. But if the government gives the full 20 feet of water in the Calumet—and it undoubtedly will—that port will have an advantage of ¼ to ½ cent per bushel in freight rates. The action of Counselman in building a large elevator on the Calumet clearly shows the tendency. By the Belt line, South Chicago is nearly as accessible for the railroads as Chicago river elevators. A half dozen elevators on the Calumet will turn a good share of the grain trade in that direction. It must be remembered that it is all Chicago, any way, and Calumet river elevators are as "regular" as any other, if they comply with the board of trade regulations.

The Lake Marine News Association was organized at a meeting held last Saturday at the Inter Ocean office. William Penn Nixon is president and Homer J. Carr manager.

Labor Agitators—Milwaukee Matters.

Special Correspondence to the MARINE REVIEW.

MILWAUKEE, Wis., March 17.—About this time each season it is customary for lake-faring men to hold meetings and "organize" for mutual protection, without regard to organizations previously arranged and still in existence. These meetings are merely called by the leaders whose bread and butter during another season of welcome idleness depends upon the fatness of the treasuries of the organizations they represent. Here in Milwaukee, which has for years been one of the strongest union ports on the lakes, these leaders have recently held a series of meetings to organize the vessel men and steamboat men in a war upon non-unionists and Canadians, "for mutual protection." A committee appointed at one of the meetings called upon the collector of customs and United States district attorney, Monday, to ascertain what these officials could do to prevent the employment of Canadian seamen on American vessels. Collector Watrous said he could not do anything for them beyond pushing prosecutions under the alien contract law on full and sufficient proof of violations. From the assistant district attorney they learned that there was no law to prevent Canadians from coming over of their own accord to work during the summer and going where they pleased during the winter. They were also told that there was no way of getting at the offending captains unless sufficient evidence could be secured to convict them of perjury. Of course, the agitators knew this before they sent the men out on this mission; but it served to strengthen them with the ignorant majority, and that is about all they had in view. The organization of steamboat men may cause trouble in the direction of this class of floating property the coming season through wage strikes, etc. Heretofore this burden has rested solely upon sail vessels, and owners of this class of property no doubt will enjoy the fun growing out of the discomfiture of masters and owners of steam craft.

Some Milwaukee vessel owners incline to the belief that the condition of the pig iron market is not nearly as bad as the furnace men represent, and attribute to the latter,designs upon the producers of ore in giving out the glowing reports which are now being printed weekly with unfailing regularity. They even feel inclined to blame the papers for publishing such reports, or in fact anything calculated to dim the lustre of the outlook as it appeared to them early in the winter. They recognize the fact that iron is king, and that without an abundance of ore to be carried,grain freights must go utterly to pieces in a very short time after the opening of navigation, no matter how large the stocks in sight out west may be.

Following are the leading vessel sales recorded here recently: Schooner Annie Dall, David and John H. Dall to Michael Anderson, the whole, $2,000; schooner M. Capron, M. Hilty to Christen Christenson and John A. Nelson, of Milwaukee, and Peter Anderson of Racine, the whole, $1,800; steamer Pueblo, John and Andrew Joys to John B. Merrill, one-twelfth, $1; Steamer Topeka, John and Andrew Joys to Capt. A. Gibbs, one-twelfth, $1.

Canadian Marine Legislation.

Special Correspondence to the MARINE REVIEW.

KINGSTON, Ont., March 17.—The session of parliament just opened may see considerable marine legislation. The act to amend the pilotage law, given notice of by the minister of marine, exempts from pilotage dues, in Canadian ports, vessels of 100 tons and under. This change is proposed so that a better class of boats will enter the fishing trade. Then again the marine engineers have petitioned the department to compel all engineers to exhibit their certificates in their engine rooms, and also to empower the customs officers to enforce this rule and see that all boats have competent engineers. The erection of a steam fog whistle, so long talked of, will be taken into consideration by the government, and so will the matter of fees of the dry dock. The present scale is said to be so high that it is almost prohibitory to many vessel owners, who can not afford to pay as much as wealthy companies. The minister of public works has promised to make the rates satisfactory if possible. Thus far the dock has not been largely patronized.

The agitation regarding the canal tolls, which generally begins about this time every year, is now in full bloom. A few days ago Capt. Gaskin went to Ottawa, where he was joined by about twenty others, who formed a deputation to interview the government on the matter. Recently it was thought that this year the government would not discriminate against American vessels taking grain to Ogdensburg for Montreal, but it appears that forwarders have received fresh hope, owing to the new phase of the question which was brought to the notice of the ministers by R. W. Shannon. That gentleman quoted from articles in the North American Review by David Wells of the United States treasury department,in which he showed that by the treaty of Washington, Americans were to have free use of Canadian canals and Canadians of American canals. The United States customs officers, however, for many years have interfered with the operation of this treaty, inasmuch as they will not give the necessary clearances. For instance, a Canadian vessel could not get a clearance at Oswego to go down the Erie canal for New York. Notwithstanding the treaty referred to, not one ton of Canadian shipping has gone into the Erie canal. On the other hand American bottoms can bring grain to Kingston for transhipment, and be on equal terms with Canadians, but the latter can not carry from an American port to Ogdensburg, therefore they are debarred from fair competition. The decision of the government is now expected to be the same as last year.

Appointments of Masters and Engineers.

OGDENBURG TRANSIT COMPANY, OGDENSBURG, N. Y.: Steamers—W. J. Averill, Capt. William D. Wait, Engineer Harris Higgens; W. L. Frost, Capt. D. Murphy, Engineer Robert Chestnut; H. A. Haskell, Capt. W. H. Williams, Engineer R. D. Houghton; James Langdon, Capt. Harvey Brown, Engineer John Phillips; F. H. Prince, Capt. D. A. Kiah, Engineer Thomas Leahan; A. McVittie, Capt. William Rollo, Engineer Morris Gore; Governor Smith, Capt. W. S. Shay, Engineer James Turnbull; H. R. James, Capt. James Owen, Engineer D. G. Costello.

GOODRICH TRANSPORTATION COMPANY, CHICAGO, ILL.: Steamers—Virginia, Capt. B. Sweeney, Engineer G. P. Roth; Indiana, Capt. E. Dorsey, Engineer R. Flint; City of Racine, Capt. J. M. Gee, Engineer John Durr; Atlanta, Capt. A. W. Rosman, Engineer B. Beerman; Menominee, Capt. H. E. Stines, Engineer————; City of Ludington, Capt. John Raleigh, Engineer J. Bushman; Chicago, Capt. George Wittie, Engineer Felix Nider; Muskegon, Capt. A. Gallagher, Engineer T. E. Dorey.

MILLER, MILLS & DONALDSON, BUFFALO, N. Y.: Steamers—Florida, Capt. P. J. Kenny, Engineer George Wise; Wyoming, Capt. Robert Drury, Engineer John Hess; Robert Mills, Capt. Alex. Clark, Engineer John Leahey; Cuba, Capt. Robert Young, Engineer Fred. Fitzgerald.

SHAW, JOHN, BAY CITY, MICH.: Steamers—E. C. Pope, Capt. H. Zealand, Engineer R. Hill; C. A. Eddy, Capt. H. L. Shaw, Engineer M. Owen. Schooner Newell A. Eddy, Capt. T. W. Manuel.

RECOR, E. C., ST. CLAIR, MICH: Steamers—Mark Hopkins, Capt. L. A. Lyons, Engineer George W. Curtiss; F. W. Fletcher, Capt. H. D. Moore, Engineer William Brake; Huron City, Capt. Thomas Currie, Engineer————.

JOHNSON, H. J., CLEVELAND, O.: Steamers—H. J. Johnson, Capt. John Thompson, Engineer Anthony; V. Swain, Capt. Beneteau; Business, Capt. Robert Kerr. Schooner Helvetia, Capt. Wm. Packer.

BUCKLEY, EDWARD, MANISTEE, MICH.: Steamer Edward Buckley, Capt. Charles Gnewuch, Engineer R. Winkler.

Iron Mining.

VALUE OF LEADING STOCKS.

Quoted by Chas. H. Potter & Co., No. 104 Superior St. Cleveland, O.

Stocks.	Par Value.	Bid.	Asked.
Cleveland-Cliffs Iron Company	$100 00	$.....	$ 80 00
Champion Iron Company	25 00	.....	70 00
Chandler Iron Company	25 00	47 50	49 50
Jackson Iron Company	25 00	.....	105 00
Lake Superior Iron Company	25 00	.....	.....
Minnesota Iron Company	100 00	78 00	82 00
Pittsburg Lake Angeline Iron Co	25 00	150 00	175 00
Republic Iron Company	25 00	22 00	23 50
Ashland	25 00	.....	52 50
Section Thirty-three	25 00	.....	8 00
Brotherton	25 00	2 00	2 75
Iron Belt	25 00	2 40	2 75

When the Gogebic iron range was introduced to the investment public a few years ago, some of the leading promoters of the boom were in Cleveland. A few houses in Milwaukee and Cleveland, were in fact, headquarters for floating the stock. In the present excitement at Duluth over the Mesaba discoveries the Cleveland and Milwaukee investors have been replaced by southern men and boomers from St. Paul, Minneapolis and Duluth, but notwithstanding the conservatism shown in this regard by parties interested in the old ranges, it must be admitted that excitement in the Mesaba has had the effect of depressing to some extent the dividend paying mining stacks. The market, already dull on account of a poor outlook in pig iron, has seen few transfers of stocks for several days past, although prices have been reduced a little in some cases. It is the general opinion that the limit has been reached in the Mesaba craze.

With an incorporation fee of about $6,000 to the million, the state of Minnesota has added about $900,000 to its treasury through the organization of new companies on the Mesaba capitalized at about $150,000,000.

The Champion Iron Company has a larger stock of No. 1 ore on the surface than at any other corresponding time in its history.

In another part of this issue will be found an account of the begining of the work of unwatering Lake Angeline.

Stage of Water at St. Mary's Falls Canal.

A letter from Superintendent Martin Lynch of St. Mary's Falls canal says there has been no change in the stage of water below the canal for sixty days. The available depth is 14 feet 3 inches. Mr Lynch advances the opinion that the canal will open about April 25 with 14 feet of water. That the draft of water permitted in the canal will be little if any more than 14 feet, there is now little doubt. This is a trifle lower than the water at this time a year ago and fully a foot lower than at the opening of navigation in 1890.

Reports From the Bureau of Navigation.

Just 61 per cent. of the steam vessels of 1,000 to 2,500 tons in the entire merchant marine of the United States are owned on the great lakes. The bureau of statistics, of the treasury department, has jnst issued in the volume "Commerce and Navigation for 1891," the statistical portion of the report of the commissioner of navigation for the fiscal year ending June 30, 1891. It is fortunate that this data has been preserved, although the report of the commissioner as a whole was suppressed by Secretary Foster. The statistics deal with ship building and the tonnage of different custom districts in a very complete manner. Not only are the lakes now far in advance of all other sections of the country in the ownership of large steam vessels but the number of this class of vessels keeps increasing at a wonderful rate, as shown in the following table.

STEAM VESSELS OF 1,000 TO 2,500 TONS.

DISTRICTS.	June 30, 1891.		June 30, 1890.		Increase.	
	No.	Gross tons	No.	Gross tons	No.	Gross tons
Northern Lakes	310	512,787.58	272	439,786.85	38	73,000 73
Atlantic and Gulf coasts	164	250,732 26	157	237,105.68	7	13,626.58
Pacific coast	28	42,312.54	28	43,000.82	...	*688.28
Western rivers	21	26,706.04	22	28,588.24	1	*1,882 20
TOTAL	523	832,538.42	478	748,481.59	46	84,056.83

*Decrease.

To the total of 4,684,758.94 gross tons in the merchant marine of the country the lakes contribute 1,154,870.38 tons although the number of vessels on the lakes is only 3,600 of a total of 23,899 in the entire country. Here are the figures in this regard:

MERCHANT MARINE OF THE UNITED STATES.

DISTRICTS.	Steam vesseis.		Sail and unrigged.		Total all classes.	
	No.	Gross tons.	No.	Gross tons.	No.	Gross tons.
Northern lakes	1,592	736,751.53	2,008	418,118.85	3,600	1,154,870.38
Atlantic & Gulf coasts	2,935	886,375.34	14,629	1,894,307.93	17,564	2,780,683.27
Pacific coast	578	187,429.26	880	253,428.48	1,458	440,857.74
Western rivers	1,111	205,707.69	166	102,639.86	1,277	308,347.55
Grand total	6,210	2,016,263.82	17,683	2,668,495.12	23,899	4,684,758.94

In the building of vessels for five years past the lakes have averaged nearly 100,000 tons a year and the aggregate each year is but little below the output of the entire seaboard. Following is the statement for five years by districts:

SHIP BUILDING IN THE UNITED STATES FOR FIVE YEARS PAST.

Year ending June 30—	On the Great Lakes.	On the New England coast.	On the Mississippi River and its tributaries.	On the entire seaboard.	Total built.
	Gross tons.	Gross tons.	Gross tons.	Gross tons.	Gross tons.
1887	56,488	24,035	10,901	83,061	150,450
1888	101,103	33,813	11,859	105,125	218,087
1889	107,080	39,983	12,202	111,852	231,134
1890	108,526	78,577	16,506	169,091	294,123
1891	111,856	105,491	19,984	237,462	369,302
Grand total	485,053	281,899	71,452	706,591	1,263,096

With the year ending June 30, 1891, seventy-six steel and iron vessels of 105,618.16 gross tons were built in this country, and 55 per cent. of this tonnage, or 57,988,51 gross tons, came from lake ship yards. In the following table, relating to new steel and iron tonnage, the boats are credited to the ports from which they hail:

STEEL AND IRON VESSELS BUILT IN 1891.

PORTS.	No.	TONNAGE.	
		GROSS.	NET.
Buffalo, N. Y.	4	2,211.90	1,762.27
Cleveland, Ohio	14	26,523.27	21,110.44
Toledo, Ohio	3	3,004.75	2,366.34
Detroit, Mich	2	5,056.38	3,956.43
Port Huron, Mich	3	7,452.02	5,909.45
Marquette, Mich	5	6,328.45	5,492.16
Chicago, Ill	2	4,863.42	3,984.06
Duluth, Minn	2	2,548.32	2,239.05
New York, N. Y.	5	1,779.73	1,495.80
Philadelphia, Pa	21	36,673.37	25,032.34
Wilmington, Del	7	7,078,07	4,854 72
Baltimore, Md	1	118.64	59.32
Newport News, Va	2	260.32	130.16
Savannah, Ga	1	354.88	241.76
Dubuque, Iowa	3	1,023.18	1,010.68
Pittsburgh, Pa	1	341.46	240.06
Total, all ports	76	105,618.16	79,885.04
Lake ports	35	57,988.51	46,820.20
Seaboard and rivers	41	47,629 65	33,064.84

The following table shows vessels of all kinds, wood and metal, built in the different districts during the fiscal year ending June 30, 1891:

VESSELS OF ALL KINDS BUILT IN 1891.

DISTRICTS.	Steam Vessels.		Sail and unrigged.		Total all classes.	
	No.	Gross tons.	No.	Gross tons.	No.	Gross tons.
Northern lakes	123	93,323.41	81	18,533.04	204	111,856.45
Atlantic and Gulf coasts	216	67,073.67	728	151,318.79	944	218,392.46
Pacific coast	54	9,166.51	68	9,903.33	122	19,069.84
Western rivers	95	15,473.23	19	4,510,31	114	19,983.54
Grand total	488	185,036.82	896	184,265.47	1,384	369,302,29

"One Man's Work"—By One Who Does it.

Two engravings are presented in connection with the communication which follows, and which was received from an engineer last week in reply to an article that appeared in the Engineer, New York, February 20, 1892. The communication was held until cuts could be secured which make a more telling correction than the article itself of the mis-information set forth in the New York journal. Engineers on the lakes were suprised that such misrepresentation should be admitted to the colums of a paper whose editor is noted for his technicality, swooping down as he does in every issue on daily paper reporters who may be led to state that a boiler exploded, when, technically, it collapsed, or the crown sheet came down. It was suprising to see the cut, for which we are indebted to the American Shipbuilder, of the twin triple expansion engines of the twin-screw cruiser Edgar of the British navy, used in the Engineeer to illustrate the following from that journal:

"The engraving represents a triple cylinder high expansion engine of a vessel of war. It is very like any other engine of its class and we have not inserted it because it has novelty or is in any respect striking, but simply to call attention to the fact that on the great lakes one man is expected to care for all this mass of machinery. * * * Consider that this system is managed by one man on watch—one man only at a time." * * * * "Dangerous collisions have been avoided by extra care and forethought of the engineers, but the day cannot be far off when a terrible disaster will occur through want of sufficient help in the engine room."

Mr. Watson admits that nothing has happened, but prophesies something terrible, and perusal of the article is calculated to drive lake engineers to the limits of despair, insure their lives and carry a case of some nerve tonic. The large engraving shows what the Engineer *says* one man has charge of on the lakes, while the small engraving shows what, not one, but really two men have in charge at all times, excepting in only a few cases. Consider the chimerical text of the engineer—Twin triple engines with cylinders 40,59 and 88 inches by 51 inches stroke, which developed 10,178 indicated horse power, making ninety-nine revolutions per minute, and under forced draft 13,460 horse power was developed while a speed of 21 knots was made, steam being furnished by four double-ended boilers 16 feet in diameter by 18 feet long. Then consider the real text portrayed by the small illustration Triple engines, with cylinders 24, 38, and 61 inches by 42 inches stroke, which develop 1,354 indicated horse power making eighty revolutions per minute, steam being furnished by three single-ended boilers 11 feet, 10 inches diameter by 12 feet long. (The boilers are mentioned in both cases for Mr. Watson compels our lake engineers to run the boilers and engines.)

The entire article is a reflection on lake engineers in general. Just how they feel about it is shown in the communication which follows:

EDITOR MARINE REVIEW:—The Engineer of New York has taken up the subject of "more help in the engine room" again and, unfortunately, over-steps the mark by making it appear that the engineers on the great lakes are driven by their neccessities to do that which is not "common justice between man and man." That the Engineer means well no one doubts but that it has been misinformed regarding the real position and standing of the marine engineer on the lakes is very evident to us who live here and are personally acquainted and closely associated with them. The editor of the engineer has not been connected with lake marine since 1851 and his ignorance of the situation is pardonable. We have only one steamer, the Virginia of the Goodrich line, that has twin triple engines and she carries a crew of seven engineers and as many firemen as the chief desires. All of our Buffalo line steamers, carry three engineers, while the Northern line boats have four each and the Lehigh Valley line five engineers. They all carry three firemen, some four, and the Chemung, Owego and Susquehanna have six and eight men in the fire-hold. The same may be said of the Detroit, Chicago, and Milwaukee lines of steamers. They are all fully manned and the engineers as a rule are hired the year around at a good salary, and by working on their engines during the winter are able to keep them in good condition at a small expense to the owners.

The Missoula and Sitka are the only two steamers out of Cleveland with triple cylinder engines that carry only two engineers. The Elphicke, Craig, Gilchrist, Gilcher, all single triples, only carry two engineers. The Philip Minch only carried two engineers last summer but will carry three again this season.

The Bradley steamers, the Cleveland Rolling Mill Company's, Cleveland Iron Mining Company's, Minch steamers, and the Menominee Mutual and Minnesota line steamers are well manned by good engineers, and positions in these boats are eagerly sought after. For that matter places in the half dozen boats that carry two engineers are fought for by some engineers—we will not say what kind of engineers. Stacks of applications on the desks of the managers of these "one-man's-work" steamers would indicate clearly that it is the engineers' own fault that there are such. Engineers are not driven on board these boats; neither are there any strings tied to them to keep them there, so whose fault is it? "Their neccessities," says Mr. Watson! An engineer surely had "necessities" before he became a chief and it strikes us that we would rather be an assistant on a good boat with plenty of help than chief of one of these "neccessities"

Seven men, not four—four engineers and three firemen—run many of our 2,000-ton ships 800 miles as hard as they can be run, watch and watch about, and when they get to their destination they turn around in three or four hours and drive them back again. We would like to see some salt water men come here and try to do it.

We have engines here that have been driven like this for the past eight years without one cent of repairs on their crank-pin brasses, cylinders, piston rings, valves and valve seats. A fore and aft compound, 30 and 56 inches with a 4-foot stroke, turning eighty-four revolutions a minute, and having a record of this kind, can be seen here at any time. This, of course, speaks well for our engineers, showing close attention on their part both in fitting out in the winter and while running through the season. But such a thing as climbing up three flights of stairs and diving down three more into a fire-hold to take a hasty glance at boilers is not practiced by our engineers. What does Mr. Watson want an engineer to do this for anyhow? Maybe on salt water the cook is liable to carry off the boilers to his galley so that he may have something to soften the hard tack and boil the salt horse in that they get down there. On the lakes it is not necessary for the engineer to take this "hasty glance around," for we have good cooks and the best of food. "For whatever happens, the engineer must answer and be held responsible," says the Engineer. Who else ought to answer or be held responsible? The cook? Does he come in again? Who does the Engineer expect would answer if not the chief. But the "firemen may burn the boilers by letting the water down." What water? No fireman on the lakes has anything to with the water in the boilers. The engineer has his water glasses and gauge cocks close at hand in the engine room, and the engineer who would allow a fireman to look after the water in the boilers of any of our lake steamers would very shortly be on the dock looking after the steamer going out with another engineer on board. The end of the world that Mr. Watson predicts may not come, for as he says, forethought of engineers has prevented hitherto terrible disasters, and a voluntary advance in salary is not going to make engineers lose their forethought.

The sense of the whole article can be summed up in one sentence without misrepresentation and without any "bogie-man" nonsense. When one man is alone in the engine room, and as I have mentioned, this is only true in a half-dozen of the lake steamers having triple engines, the owner can understand that the factor of safety, that is considered when the engines and boilers are built, is very low. Even if he does not consider the amount of work an engineer can do, he does consider the risk on his investment. Why not consider the wages of one of the two men on watch as insurance. It will not figure up a very high rate.

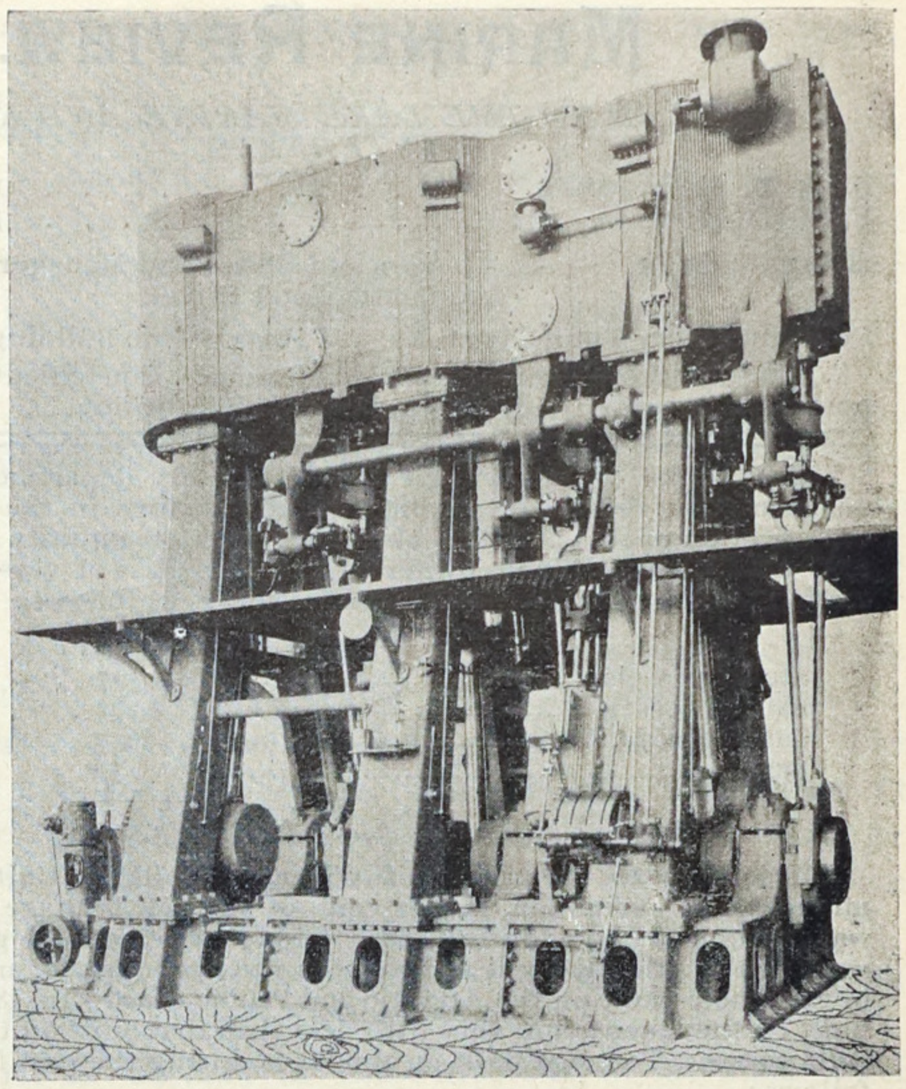
We were shipmates with a captain a few years ago, who owned an interest in the steamer. He was a fine man to work for, but he could not see any use in having more help in the engine room. We did not care to argue with him so from time to time put him off by saying that he did not see it as we did. One nice morning as we were going up Detroit river, the flyers and fast side-wheelers meeting and passing us and everything working nicely, he saw me comfortably seated, enjoying a smoke. "Well, it is too bad you have not more help" said he, "to fill your pipe and get you a match. You sit there for a half hour at a time and don't touch an oil can once in two hours." The engine had syphon wick-feeds for pins and guides, compression dope cups on journals and eccentric straps, and was, I admit, what is termed a "snap." "I am pleased," he continued, "to see every thing running so easily and I would much rather see you sitting there comfortably than flying around with a big oil can in one hand and a hose in the other, but you maintain that you ought

to have two men on watch." "Now captain, this has gone far enough," said I. "In ten minutes I can show why you should have more help."

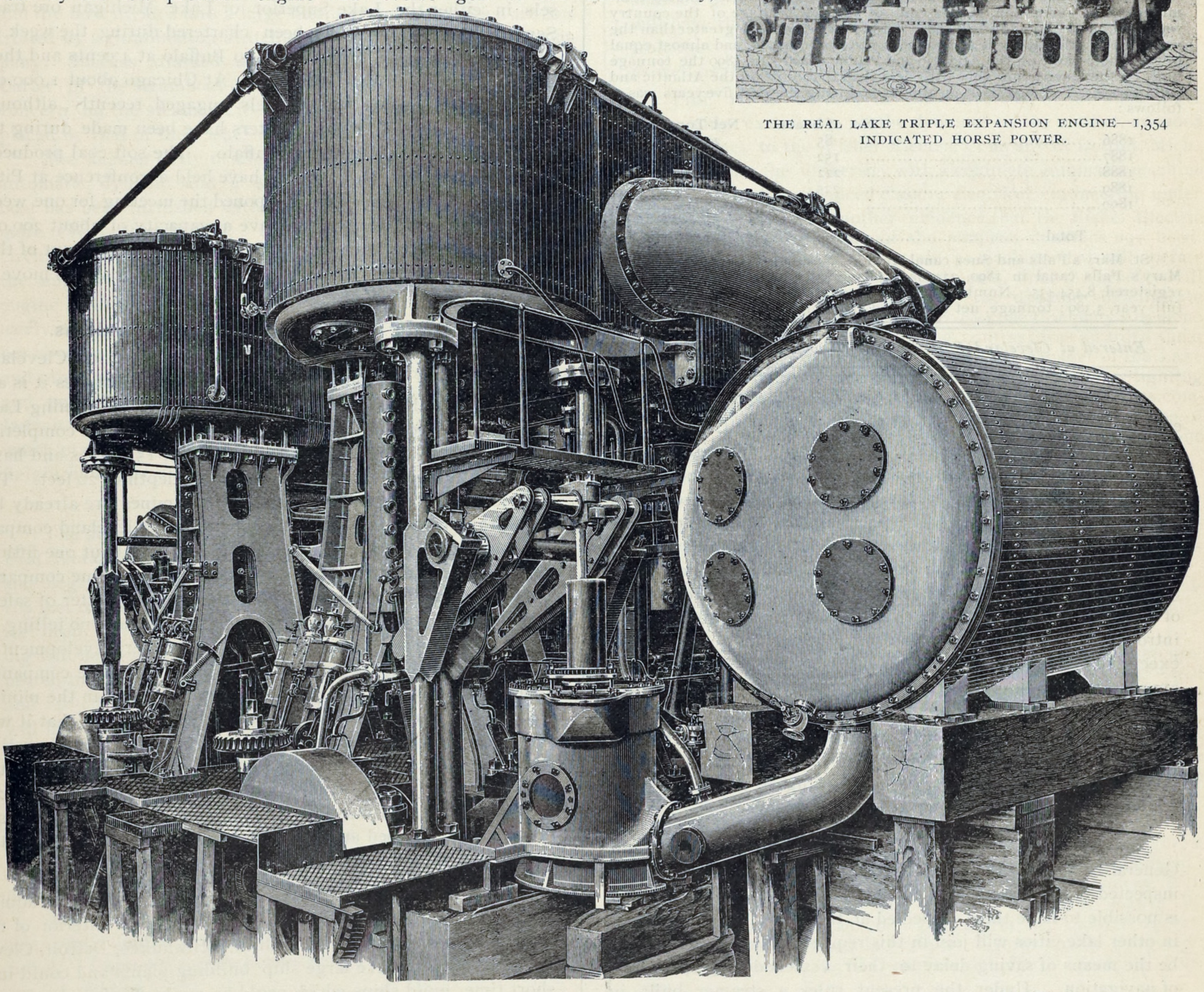
"Go ahead" he said, and then I went on to explain. "We will suppose you are on the pilot house and you see a steamer about a mile away, probably a tow close to her, and you pull three whistles and check down. You don't want to meet her at this particular place and, as she still comes on towards you in a dangerous manner and you want to be on the safe side, you stop and back. Yet all you have done seems to be of no account for now it looks like a collision and in a minute you are either sunk or high and dry on the bank. You did all any man could do. Your testimony is taken and the accident is said to have been unavoidable; you checked, stopped and backed and could do no more. But did you? As you say, I sit here for half an hour at a time, then I go below in the crank room to see how everything is working. I will do so now and when I get over to the air pump, you will, with this whistle-pull in your hand, imagining yourself on the pilot house, pull the check-whistle and notice how long it takes me to get back up here to the throttle and check her down."

This seemed to interest him, so down I went to the air pump and three whistles were pulled by him as a signal to check. I started down two steps off the air pump to the platform, back aft by the condenser, bilge pump and universal coupling, to the driving bearing, up one step more and then across the platform over the shaft and down two more steps, then along a wet slippery floor by the low pressure engine and reverse gear to the first stairway, up to the middle platform, turning half way round, and then up another flight of stairs to the engine room floor. I was then ten feet away from the throttle and the captain was disappearing through the engine room door. He had checked, stopped, backed and pulled a half dozen more whistles and disappeared without a word to me. Nothing was said about the matter by either of us until on the return trip at the table he leaned over and whispered: "The rivers are pretty crowded tonight, so so hang around the throttle as much as you can and tell your assistant to do the same, for when I pull a check or stop whistle I don't want the boat to go a mile before you get to the throttle." All right, sir," said I, "and how about more help in the engine room?" "I must hurry up forward," said he.

S. H. HUNTER, Marine Engineer.



THE REAL LAKE TRIPLE EXPANSION ENGINE—1,354 INDICATED HORSE POWER.



THE NEW YORK ENGINEER'S LAKE TRIPLE EXPANSION ENGINE—13,460 INDICATED HORSE POWER.

MARINE REVIEW.

DEVOTED TO THE LAKE MARINE AND KINDRED INTERESTS.

JOHN M. MULROONEY, ... } PROPRIETORS.
F. M. BARTON, ... }

HOMER J. CARR, - - - Associate Editor and Manager Chicago Office, 210 South Water Street.

Published every Thursday at No. 510 Perry-Payne Building, Cleveland, O.

SUBSCRIPTION—$2.00 per year in advance. Convenient binders sent, post paid, 75 cents. Advertising rates on application.

The books of the United States treasury department contain the names of 3,510 vessels, measuring 1,063,063.90 tons in the lake trade. In classification of this fleet the lakes have more steamboats of 1,000 to 2,500 tons than the combined ownership of this class of vessels in all other sections of the country. The classification is as follows:

Class.	Number.	Tonnage.
Steam vessels	1,527	652,922.25
Sailing vessels	1,272	328,655.96
Canal boats	657	67,574.90
Barges	54	13,910.09
Total	3,510	1,063,063.90

According to the report of William W. Bates, United States commissioner of navigation, 46 per cent. of the new tonnage of the country was built on the lakes during 1889. This is a percentage greater than the work of the Atlantic coast and western rivers combined, and almost equal to the whole work on the Atlantic and Pacific coast. In 1890 the tonnage built on the lakes is but very little less than that built on the Atlantic and Gulf coasts. Tonnage built on the lakes during the past five years was as follows:

	No. of boats.	Net Tonnage.
1886	85	20,400.54
1887	152	56,488.32
1888	222	101,102.87
1889	225	107,080.30
1890	218	108,515.00
Total	902	393,597.03

St. Mary's Falls and Suez canal traffic: Number of boats through St. Mary's Falls canal in 1890, 234 days of navigation, 10,557; tonnage, net registered, 8,454,435. Number of boats through Suez canal during 1890, full year, 3,389; tonnage, net registered, 6,890,014.

Entered at Cleveland Post Office as Second-class Mail Matter.

IT was announced immediately after the reciprocity conference in Washington between representatives of the Canadian and United States governments that the matter of discrimination in Welland and St. Lawrense canal tolls as well as the question of reciprocity in wrecking on the great lakes had been settled in accordance with the views of American lake interests on these subjects. It would seem, however, that although there is again a manifest disposition on the part of the Canadian parliament to accept the American proposition for reciprocity of service in case of wreck or salvage, a bill for that purpose having been recently introduced by Mackenzie Bowell, minister of custom, the executive officers of the government have not as yet given full approval to the movement in any way. As regards the subject of discrimination in canal tolts, the Canadian commissioners simply promised to give it their immediate attention. Even this has aroused the Kingston forwarding interests, who are again very earnest in their opposition to allowing a rebate on grain bound through the canals to American ports.

DETROIT vessel owners are about to petition Inspector General Dumont of the inspection service to have steam vessels inspected before the opening in the spring, in all cases where it is possible to have them inspected at that time. Vessel owners in other lake cities will join in this request, as such a plan would be the means of saving delay to their vessels during the season of navigation. Under the present rules a steamer built in August will be inspected in August each year afterward. On account of the peculiarities of the lake trade, every minute of time being taken advantage of during the season of navigation, vessel owners have a right, as against shipping interests elsewhere, to ask for inspection in the spring, but the argument to be raised against such a system is that it would crowd the work of the inspectors into two or three months of the year.

On Monday next at 10 a. m. the army engineers appointed to consider the application for a bridge at Duluth harbor entrance will meet at Detroit. General Poe, senior member of the commission, asks that all arguments for or against the project be submitted in duplicate type-written copies. The Lake Carriers' Association and Cleveland Vessel Owners' Association will both enter strong protest against the bridge. A bad precedent would be established if the construction of this bridge is permitted by the government. Defeat the project.

Lake Freight Matters.

Some Cleveland ore dealers have been inclined to a more favorable view of the iron market during the past week, on the claim that it is admitted on the part of all concerned that depression has reached its limit, although there is no outward change in conditions. Prospects of a late opening, indications of low water and a fair demand for vessels to carry grain are all factors that have combined to relieve the vessel owners of anxiety regarding iron ore, notwithstanding the absence of demand for vessels in either the Lake Superior or Lake Michigan ore trade. Several large steamers have been chartered during the week for first trips with grain from Duluth to Buffalo at 4 cents and there is still a demand in this direction. At Chicago about 1,000,000 bushels were loaded into vessels engaged recently, although not more than three or four charters have been made during the week at 3¾ cents on wheat to Buffalo. The soft coal producers and railway men who were to have held a conference at Pittsburgh on Tuesday last have postponed the meeting for one week. Vessels wintering at Buffalo have a capacity of about 200,000 tons, so that the feeling as to opening rates on coal out of that port is not as strong as it would be with less tonnage to move at the opening.

To Drain a Lake of 800,000,000 Gallons.

From the Cleveland offices of the Lake Superior, Cleveland and Pittsburgh & Lake Angeline mining companies it is announced officially that work on the project of draining Lake Angeline has begun under a contract calling for its completion in five months. The lake covers an area of 153 acres and has a maximum depth of 43 feet with a mean depth of 20 feet. The lake is owned by these companies, whose mines are already being worked beneath it, the Lake Superior and Cleveland companies controlling about equal portions of all but about one-fifth of the property, which is owned by the Lake Angeline company. This large body of water is being removed as a matter of safety to the present underground workings, but there is no telling, of course, what may be done in the way of further development of the properties when the water is out of the way. The companies undertaking this work are among the strongest in the mining business of Lake Superior and there is little doubt that it will be carried out successfully. The contractor is C. B. Howell of New York. A crib will be sunk while the ice is still on the lake. A centrifugal pump having a 20-inch suction and a 22-inch discharge, with a capacity of 15,000 to 20,000 gallons a minute will be used and the water will be discharged into the Carp river.

Admiral Watson, H. M. N., in a report to the British admiralty, says that the ship building firms in the interior of the United States especially at Duluth, Milwaukee, Detroit, Cleveland and Buffalo have large ship building plants and could in a short time build ships which could be easily converted into war vessels. The British admiral is not the only person acquainted with shipping that is surprised at the wonderful development of ship building interests on the great lakes. Shipping men nearer home are astonished at what western ship builders are doing.—Maritime Register.

Send 10 cents in stamps for copy of supplement contained in this issue.

Electric Lighting on Lake Steamers.

Within the past few years lake vessel owners have given considerable attention to the equipment of their vessels with electric lighting plants and it is more than probable that some of the plants now aboard the large lake steamers, of both the passenger and freight kind, are the finest to be found in the country. A supplement accompanying this issue of the REVIEW presents a night scene on Lake Erie, showing two of the big side-wheel steamers of the Detroit & Cleveland Steam Navigation Company, elegantly illuminated and passing within short distance of each other. The illustration is from a painting made by H. F. Sprague.

The electric lighting plants on these boats were put in recently by the Fisher Electric Company of Detroit. In the steamers City of Cleveland and City of Detroit No. 2 this company, which makes a specialty of steamboat work and has now equipped all but a few of the big boats on the lakes, replaced the plants of two other electrical concerns. The Fisher company's plant on the City of Detroit No. 2 was put in last spring. Antomatic dynamos were put in, the entire lower part of the steamer was rewired and the boat divided into a large number of circuits,which are controlled by a combination switchboard manufactured by this company. Success attained with the first boat caused Manager Carter of the steamboat company to cause the plant of another concern on the steamer City of Cleveland to be removed and replaced by that of the Fisher company.

The steamer City of Cleveland is equipped with a 150-light automatic dynamo and a 400-light automatic machine. The boat has been furnished with new fixtures throughout and lights more evenly distributed. The steamer is divided into sixteen circuits, enabling the engineer to control the entire system from the engine room. Each dynamo is driven by an independent engine and the entire system is arranged to be very flexible and easily controlled. The boat has been entirely rewired with rubber-covered wire, equipped with standard sockets, snap switches and other appliances and the plant is one of the most complete and perfect on the lakes. The plant on the steamer City of Detroit was operated during the season of 1891 without a dollar's worth of expense,excepting for lamps broken by passengers and freight handlers.

Detroit-Built Yachts.

The steam yacht building for Mark Hopkins by the Detroit Boat Works, Detroit, Mich., will very likely surpass in speed and elegance any craft of this class on the lakes. She will be 106 feet on the water line, 120 feet on deck, 16 feet beam and 8 feet deep. The frame is of oak, the hull of cedar and the finishing will be in mahogany. The 7 by 8 foot Roberts boiler is expected to furnish steam at 200 pounds pressure to the 9¾, 14½ and 24-inch by 14-inch triple expansion Hodge engine. She will have an independent condenser. The 96-foot passenger boat building at the same works for V. Doller, Put-in Bay, will have engines of the same size and will cost $18,000. She is guaranteed good for 16 miles.

Trade Notes.

Mr. Phil D. Sloan will represent the Vacuum Oil Company at Ohio ports during the coming season

The Penberthy Injector Company, Detroit, Mich., is manufacturing a double feed automatic crank-pin oiler that is new and novel. Engineer supply houses would do well to write to them for information.

S. B. Hubbard, who has been for the past three years in charge of the business of the Sandusky Coal Company, will be manager of the Hubbard Coal Company of Sandusky during the coming season. The Sandusky Coal Company has quit business.

Boilers and pipes of the steamers Cumberland, Gilcher, Schuck and C. H. Green, are being covered with Magnesia sectional covering. The office of M. P. Satterthwaite, manager of this company, has been removed to 26 South Water street, Cleveland.

At Wheeler's West Bay City yard the Ossifrage has been lengthened 30 feet and is ready for new cabins, the new boiler and engine having been put in. At the dry dock the tug Music is being rebuilt and will receive a new boiler and engine. The Burlington received stern repairs while in the dock.

The gigs and sail boats for the six light-house tenders building at the yards of F. W. Wheeler & Co. and the Globe Iron Works Company, were built by the Detroit Boat Works, Detroit, Mich. This company has orders for fifty life-boats and yawls and 100 pleasure craft, one order from Nebraska calling for sixty row boats.

With a dissolution of partnership in the firm of Elsey & King of Detroit, Mr. Elsey goes to the Grummond line and Mr. King has accepted a position with Parker & Millen. The Grummond line will have all the tugs and wrecking equipment of last season and its passenger service will be improved by the addition of the steamer Depere to the line. Parker & Millen will have the tug Favorite at Cheboygan all season, and at Detroit they will have the Canadian wreckers Saginaw and Onaping as well as the Balize which they control.

Prof. H. S. Carhart of the University of Michigan, after thoroughly examining all the dynamos on the market, awarded the contract to the Fisher Electric Company of Detroit, Mich., for furnishing the university with a complete automatic machine to be used by the advanced class in electrical engineering under his charge. This is another evidence that the Fisher Electric Company manufacture one of the simplest dynamos now used. Prof. Carhart has aimed to attain a machine that will operate from full to no load without adjustments, that the brushes will have a fixed point of commutation, the dynamo shall operate without a rheostat and as the Fisher Electric Company's dynamo will fulfill all these conditions, the contract was awarded them by the board of regents. A. W. Colton, manager of the Lake Erie Transportation Company,has awarded contracts for lighting the steamers Sage and Gault to the Fisher company. This company will also equip the steamer Samuel Mitchell, building at the yard of the Globe Iron Works Company, Cleveland. She will have a powerful Fisher search llght placed on the stern.

Around the Lakes.

Reports from Tawas and Oscoda say that the ice extends out as far as the eye can see and it is piled up to a height of 20 or 25 feet.

John McGeehan, who has been connected with Upson, Walton & Co. of Cleveland for a number of years, was recently admitted to membership in the firm.

The Rochester Transportation Company's boats—the propeller Northerner and schooners Boody, Morey and Mott—will be managed in Rochester this season by C. H. Blakeslee, a member of the company.

Of the steam vessels to which the bureau of navigation assigned official numbers during the week, the Sir Arthur is the only craft from the lakes. The boat is owned at Grand Haven and is of 21.38 tons gross and 14.69 tons net. The official number assigned to her is 116,477.

Officers of lodge No. 96, M. E. B. A. organized at Houghton, Mich., recently are as follows: Edwin Curry, past president; Joseph Greenleaf, president; Moses Hebert, vice-president; William E. Geary, recording and financial secretary; Edwin W. Curry, corresponding secretary and treasurer; Charles Fisher, chaplain; Peter Gagnon, doorkeeper; George Allie, conductor; Telesphore Beassau, Cyril Carpenter and Emlin Seaginro trustees.

Capt. James Davidson has sold his steamer City of Paris to to a syndicate composed of Capt. John S. McNeil of West Bay City, Thomas Cranage and J. W. McGraw of Bay City and Edward Smith of Buffalo. The price is said to be $150.000. Capt. McNeal will sail her. He has sold his interest in the propeller D. Leuty, which he has sailed for several seasons, to George D. Jackson of Bay City, and he has also sold his interest in the barge R. Bottsford of that tow.

Notices to Mariners.

The light-house board gives notice that on April 15 a fixed white light of the fourth order will be exhibited from the temporary structure erected on the extremity of Seul Choix point, northern end of Lake Michigan. The light will illuminate 270° of the horizon extending from N. N. E. through eastward and southward to W. N. W. The focal plane is 56 feet above mean lake level, and the light may be seen, in clear weather, from the deck of a vessel 10 feet above the lake, 14 statute miles. The light will be shown from an octagonal wooden lantern, painted black, surmounting a pyramidal open framework tower 47 feet high from its base to the focal plane. The upper part of the tower is inclosed. Distances and true bearings of prominent objects are approximately, Scott's Point E. N. E. ⅞ E., 10⅞ statute miles; Squaw island, E. S. E. ¼ E., 16½ statute miles; Gull island, S. by E. ¼ E., 14⅞ statute miles.

It is also reported from Washington, but not officially, that the light at St. Joseph's pier, which was put out on account of the formation of a bar in front of the harbor, will be re-established. The bar has disappeared.

On the same date, a fixed red light of the fourth order will be exhibited from the structure erected on the point separating Agate and Burlington Bays, entrance to Two Harbors, Lake Superior. The light will illuminate the entire horizon. The focal plane is 78 feet above lake level, and the light may be seen in clear weather about 13 statute miles. The light will be shown from a black lantern, surmounting a square red brick tower, 43½ feet high from base to focal plane. The tower forms a corner of a two-story red brick dwelling, the roof of which is painted red. Distances and true bearings of prominent objects are approximately as follows: Headland north of Burlington bay, N. E. ¾ E., 1½ statute miles; Granite point, S. W. ⅛ W., 7⅝ statute miles. During thick or foggy weather a 10-inch steam whistle will be sounded, giving blasts of 5 seconds' duration, with alternate silent intervals 17 and 33 seconds. The fog-signal house, located about 100 feet S.W. from the light tower, is a corrugated iron structure painted dark brown.

Origin of the Term A1.

A1 is the common, everyday expression of the English-speaking race for denoting superlative excellence. Its origin and true meaning are to be found in the annals of Lloyd's Register. Edward Lloyd, from whose coffee house in London sprang up the great institution that has perpetuated the name of its founder, began the publication about 1716 of a shipping paper called Lloyd's list. In Lloyd's List, as at first published, the vessels were assigned to classes designated by the letters A, E, I, O, U, which referred to the vessels' hulls, while the letters G, M, B, meaning good, middling and bad, related to the vessel's equipment. Thus the class AG denoted a first class ship with a good outfit, while UB was the designation given to a ship of the lowest class with a bad outfit. In the register printed in 1776 it is observed that the numerals 1, 2, 3, 4 were adopted for the first time in describing the condition of the vessels' equipment, the Roman capitals A, E, I, O, U remaining unchanged as representative of the classification of the hull. This is the earliest record extant of the familiar term A1.

Self-Detaching Davit Fall Hook.

A valuable device is shown in an advertisement on page 11 of this issue. It is the Learman davit fall hook. The steamers of the Mutual line and steamers and schooners of the Orient line are fitted with them. The general managers of both lines recommends them highly. They are also in use on the Inman line, Red D. line, Ward's Havana line and the Savannah line, at at sea. Capt. Geo. P. McKay, manager of the two lake lines using them, says "the captains can not say too much in their praise." Capt. Thomas Ross, writes from Washington, D. C., saying that the davit fall hook was given a trial Jan. 25, on board the steamer Charles Macalester, running at the rate of 10 miles an hour. A 20-foot boat was used and the hooks operated perfectly. He says that since then he has made several successful launches while running at the rate of 14 miles an hour, and that he cheerfully recommends the hook as being the best he ever used. The hook is used in combination with a block for yachts. For particulars write Geo. W. Learman, 33 South St., New York.

Affairs in Admiralty.

One of the United States district judges of Pennsylvania recently awarded a stevedore $1,250 damages for injuries received while aboard a vessel and the case was appealed and heard by Judge Acheson, of the United States circuit court, eastern district of Pennsylvania. The stevedore while engaged in loading the vessel went between deck to change his clothes preparatory to going to work in the lower hold. The between-decks was dark and he fell between a feeding hole. The feeding or trimming hole was a short distance from the main hatch and was unguarded. It was the ship's duty the court held, to keep the feeding hole closed, and the stevedore, was justified in believing it closed, and was not guilty of contributory negligence.

One of the New York harbor tngs, the Mascot, on taking a tow up a small canal ran the tow upon a rock, which the tug claimed was an unknown obstruction, but it was shown that there was general knowledge of some obstructions there, and a customary and well-known course to go on one side of the canal, which the tug on this occasion departed from without cause. On trial of a libel following the accident it was held that the tug was liable for the injury to the tow for departing from the customary course.

Where the marshal had served process on a vessel owner, who had read enough of the paper handed him to know its meaning, and who thereafter refused to obey the orders of the officer as to where he should go, and who, when the officer stepped ashore to call a keeper, steamed away with his vessel, Judge Brown, of the United States district court New York, held that such acts constituted a resistance and evasion of the process of the court, subjecting the vessel owner to the penalties of a contempt.

In an emergency the master of a ship is not required to obtain special authotity from his owner before entering into a contract to pay an agreed amount for salvage aid. An admiralty court, however, will look at the reasonableness of the amount agreed on before enforcing a salvage contract.—Judge Brown, district court, New York, case of New York & C. Mail S. S. Co. vs. the G. W. Jones.

The Lake Shipmasters.

Since the annual meeting of the Shipmasters' Excelsior Marine Benevolent Association several weeks ago considerable attention has been given by leading members to the constitution and it is probable that that important factor in the existence of the organization may still undergo additional revision. The Cleveland lodge has made application for some changes in this regard to the grand lodge. A change of name to the Shipmasters' Association has been asked for, as it is suggested that the action of the grand lodge in prefixing the already lengthy title of the organization with the word "shipmasters" has tended to make the name cumbersome. It is claimed also that the association is not strictly beneficial in its nature.

Although Detroit shipmasters do not say much about the rooms of their association they rival the rooms of the other branches. A piano, billiard and pool table, chess board, etc. represent their amusements, while the furniture of the assembly room is decorated with significant emblems. From the windows one can look beyond Belle isle, and down the river the view extends beyond Smith's coal dock. The library is the only part of their quarters of which they are not proud, but a plan of requesting a book from each member has been suggested.

Capt. Neil McCormick, M. Folan, H. H. Ferguson and M. J. Galvin, were elected as members of Buffalo lodge, at its last meeting. A strong protest against the passage of the Frye bill is being signed by the menbers.

Our Chicago correspondent says of the branch at that city. "The winter has been one of great prosperity for this genial group of mariners, and the meetings have been fully attended. At the meeting last week a fine bookcase, the best the committee could find in Tobey's great furniture establishment, was presented to the association by the O. S. Richardson Fueling Company. Last Wednesday, Charles E. Kremer, the admiralty lawyer gave the association a both witty and instructive lecture. Lectures will be given by Robert Rae and other good talkers, their themes being of interest to seafaring men. It is expected these lectures will be given at alternate meetings.'

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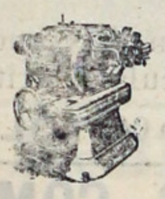

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Yours truly,
C. W. Hunt Company,
Per Geo. L. Hallauer

There are few editors of newspapers in this country who are more thoroughly in touch with their constituents than Capt. George L. Norton and Capt. Samuel Samuels of the New York Marine Journal. At the great Delmonico dinner of the New York Board of Trade and Transportation last week Capt. Norton occupied a prominent position at the table, and at the annual dinner of the Engineers' Society, a day or two later Capt. Samuels had the seat of honor next to the president of the club.—New York Advertiser.

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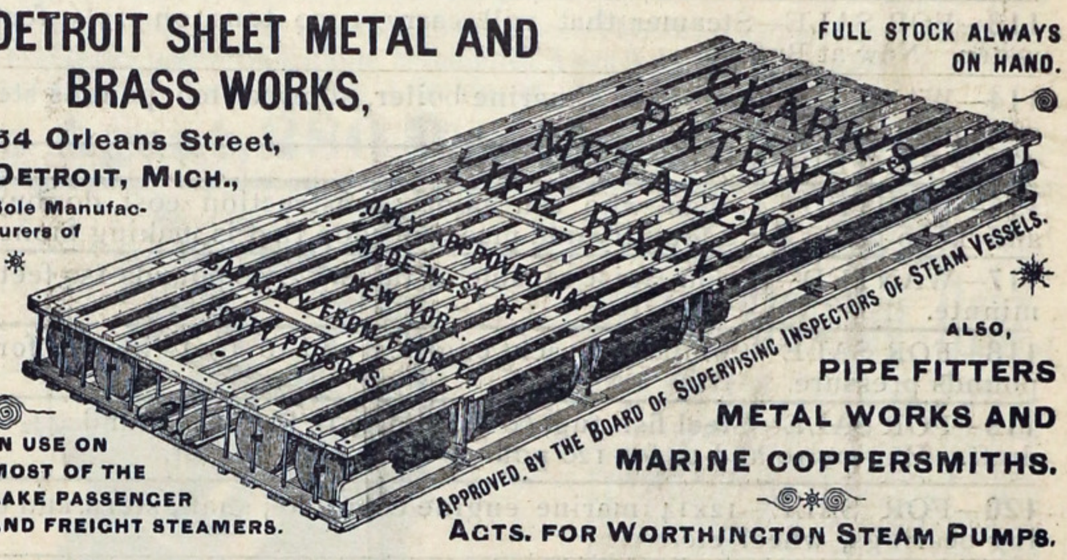

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The new town of Kenova, W. Va., offers many advantages for the location of manufacturing establishments; also the territory opened up by the Norfolk & Western Railroad on the North bank of the Ohio River, between Kenova, W. Va., and Portsmouth, Ohio. For the manufacture of finished iron articles the district offers unequalled advantages, with supply of Coal and Pocahontas Coke on short hauls, and with the blast furnaces of the Ironton, Hanging Rock and Ashland district in close proximity. Favorable freight rates made upon raw materials to all manufacturing establishments on this line. For further information as to freight rates, maps, names of parties to whom application should be made for coal leases, etc., apply to

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Space under this heading may be used gratis by our advertisers or subscribers to call attention to vessels or any craft, machinery, new or second hand, that they may have for sale. Those wanting machinery of any kind, or wishing to purchase vessels, are invited to take advantage of the same offer. Each item will be limited to three lines. Letters concerning same must mention number attached to item and be addressed MARINE REVIEW, 510 Perry-Payne Building, Cleveland. O.

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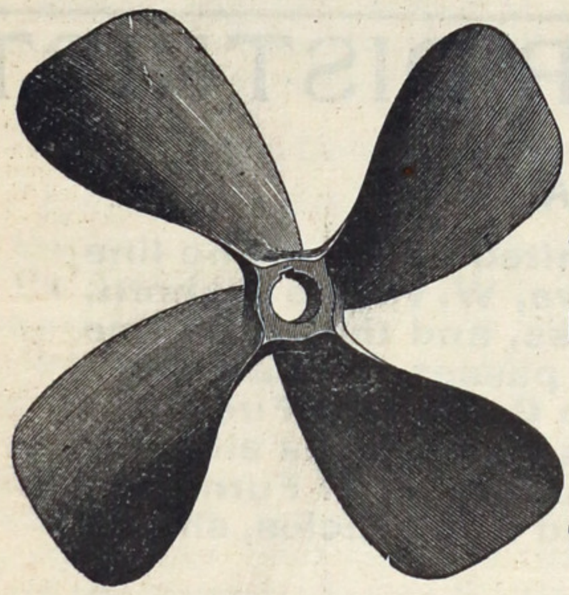

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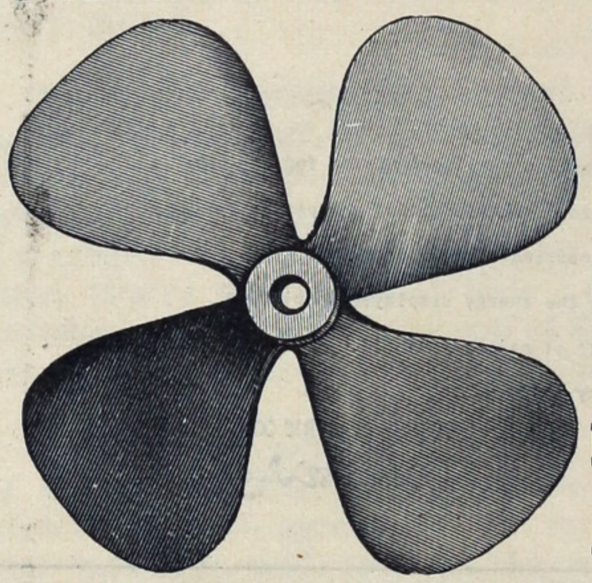

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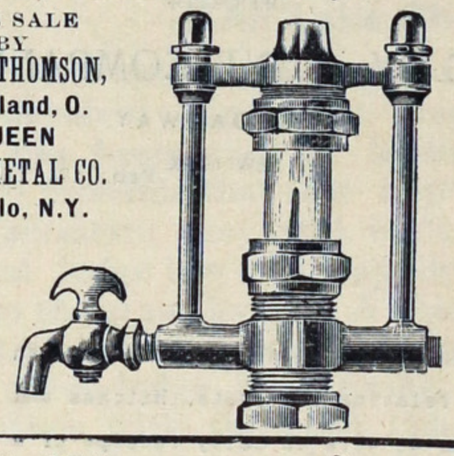

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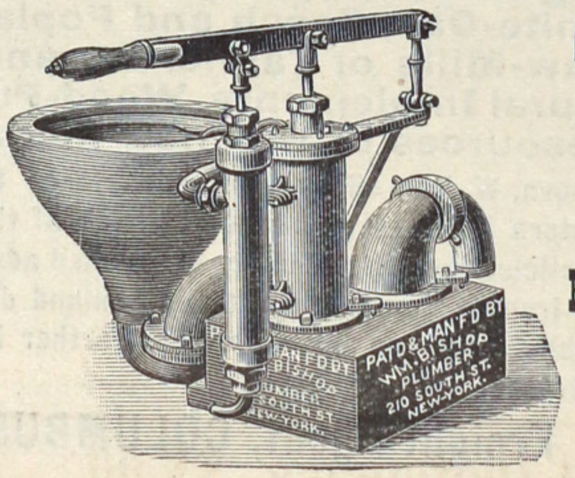

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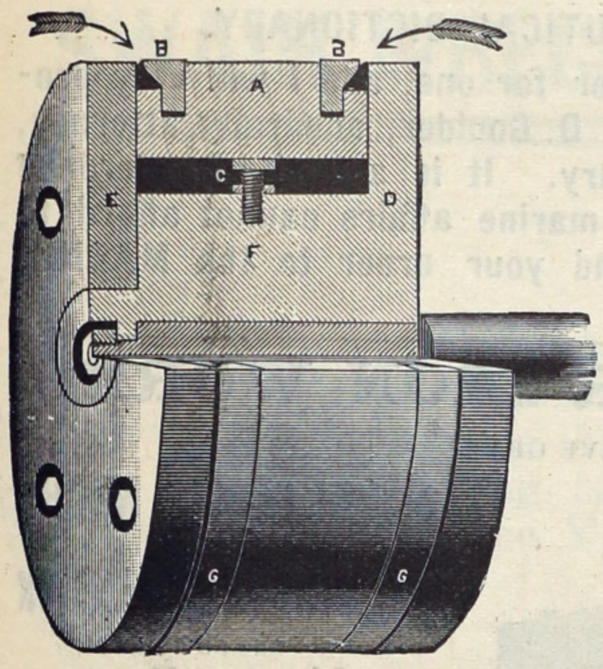

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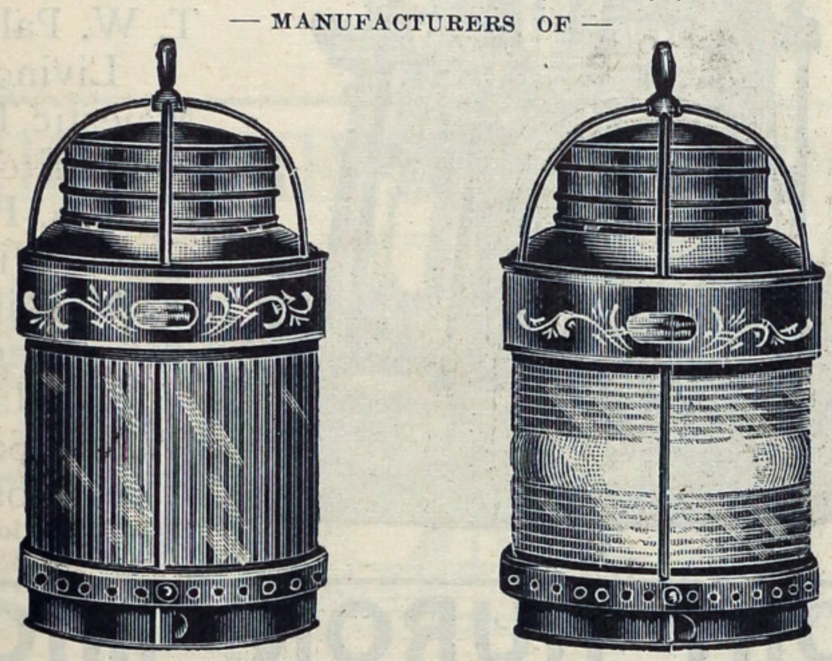

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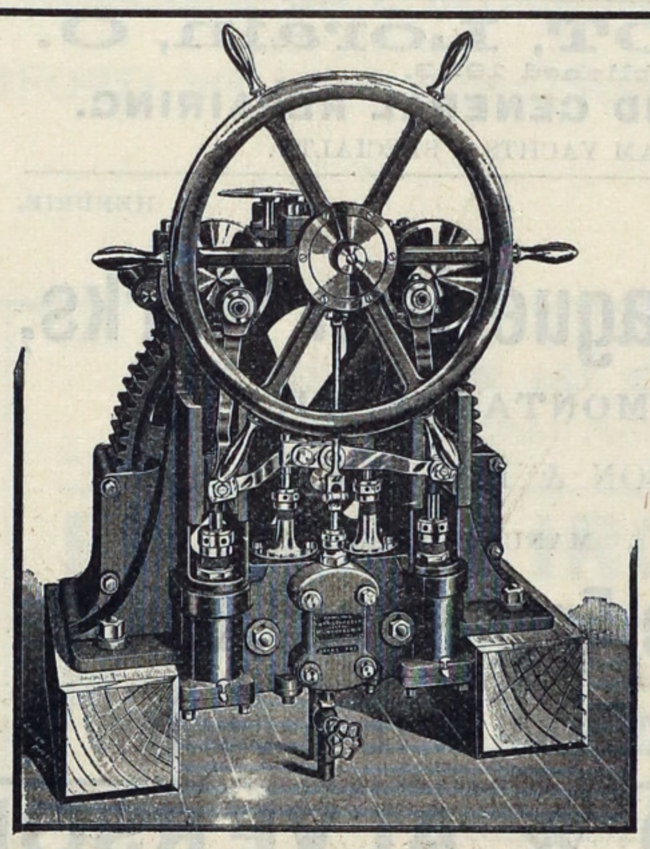

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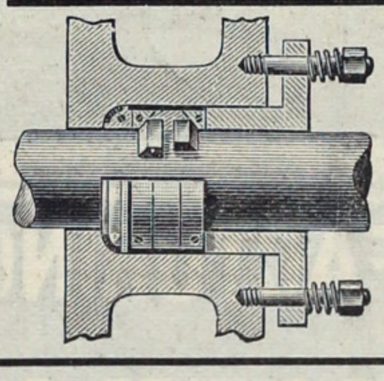

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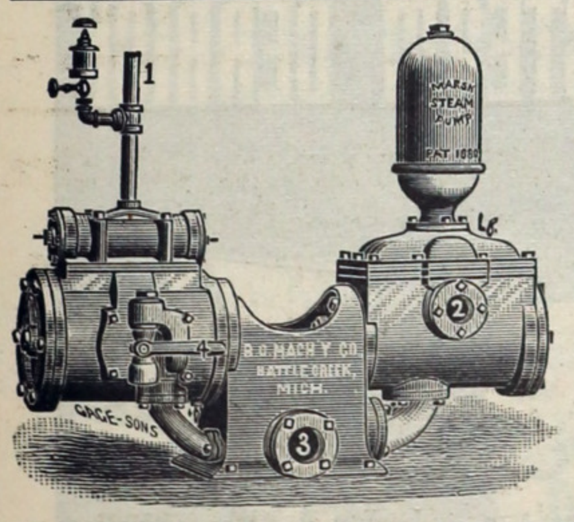

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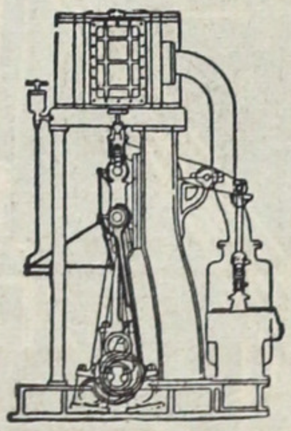

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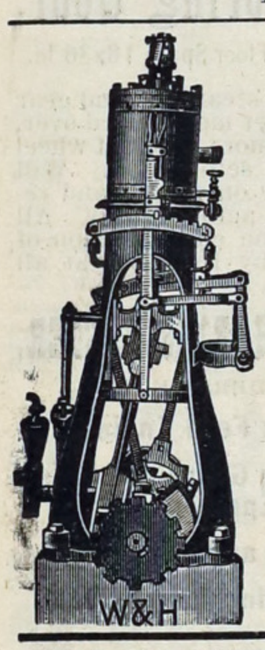

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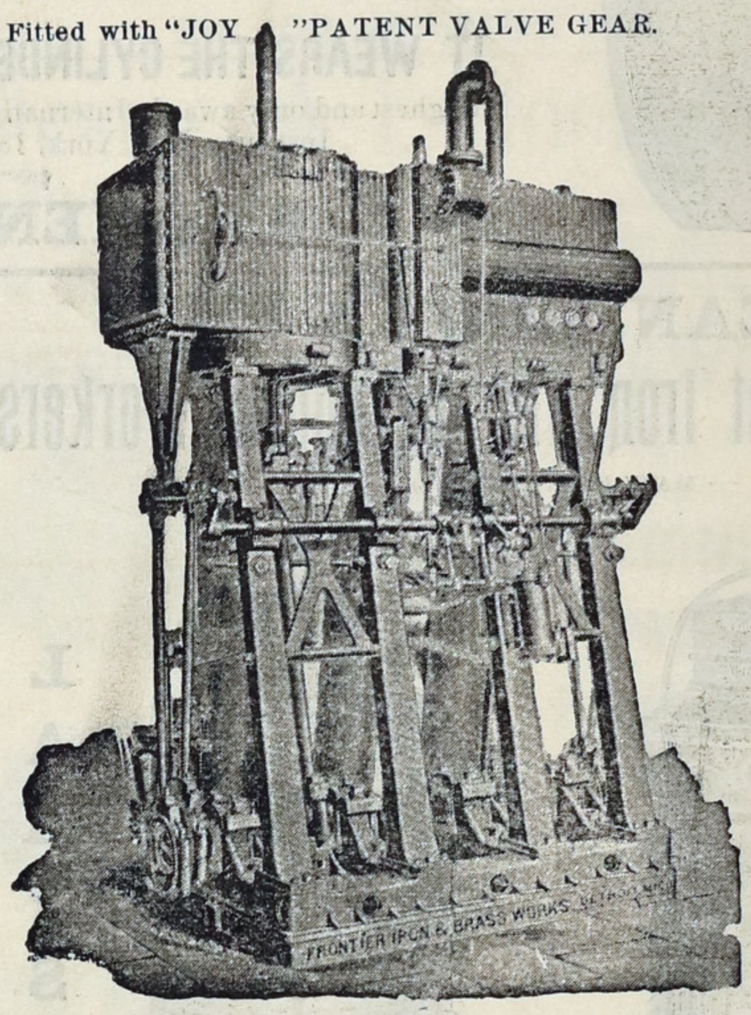

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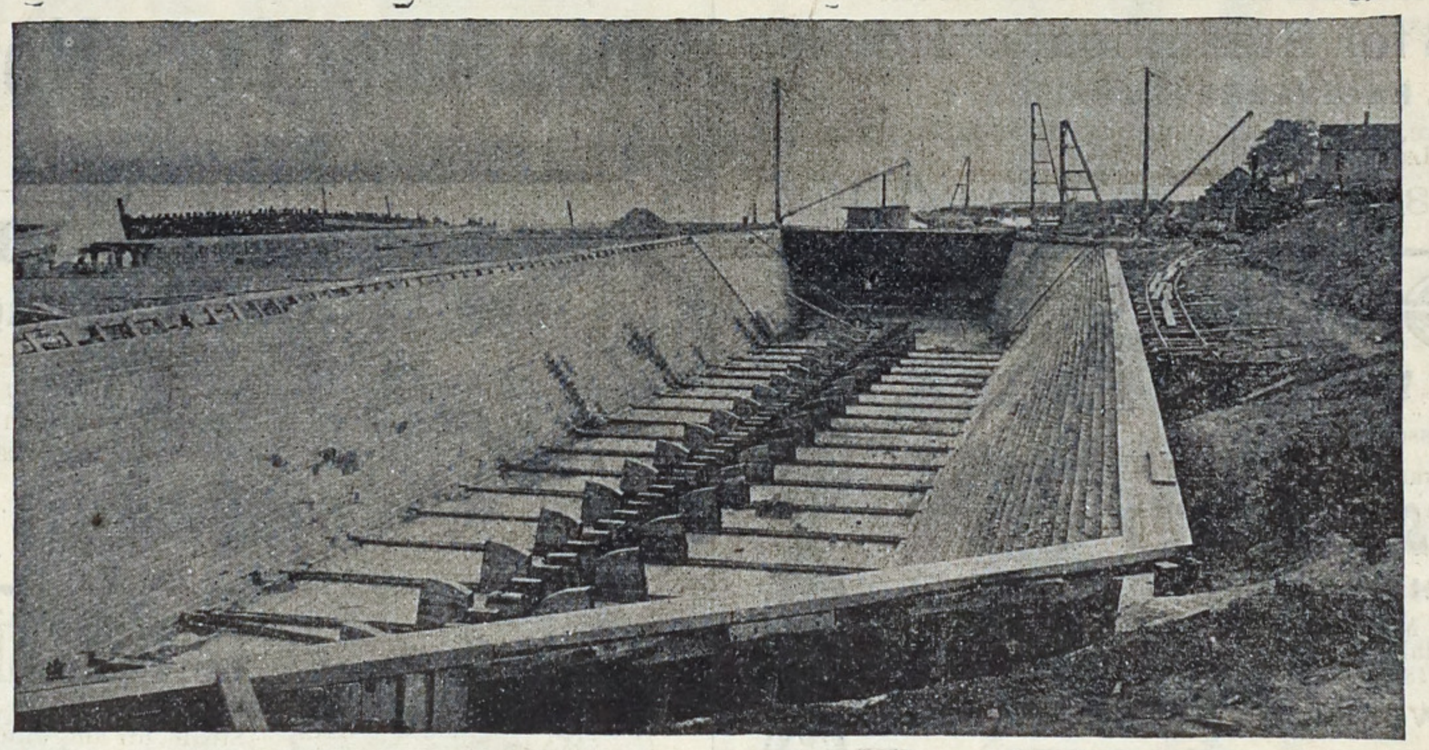

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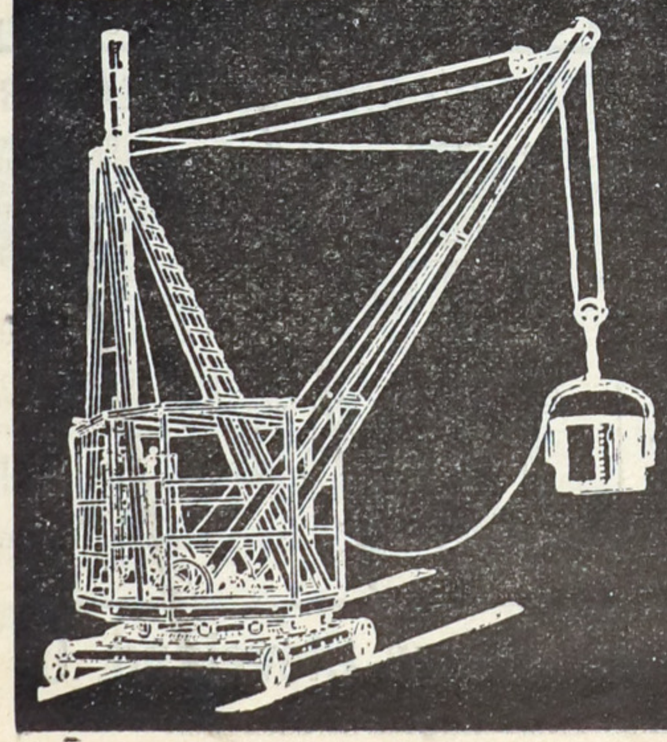

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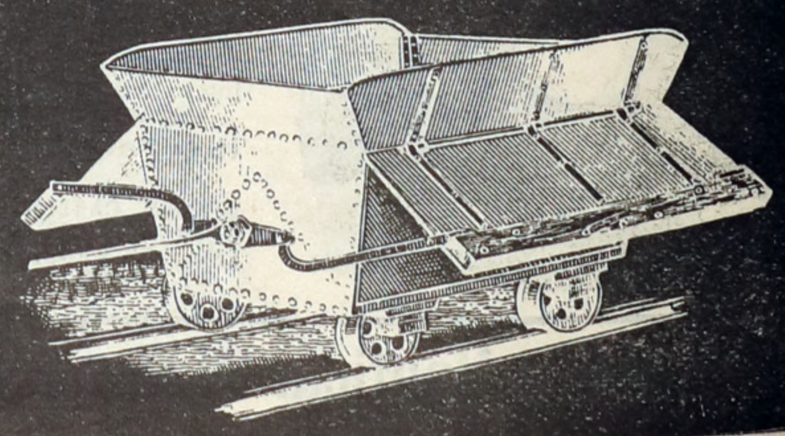

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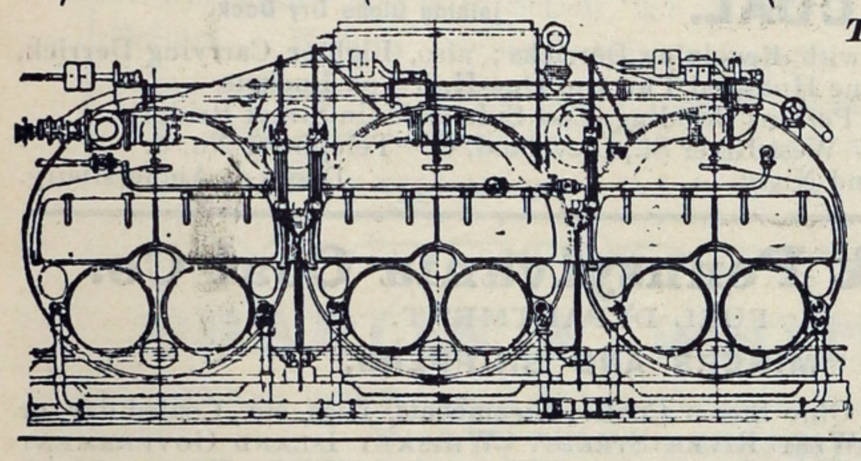

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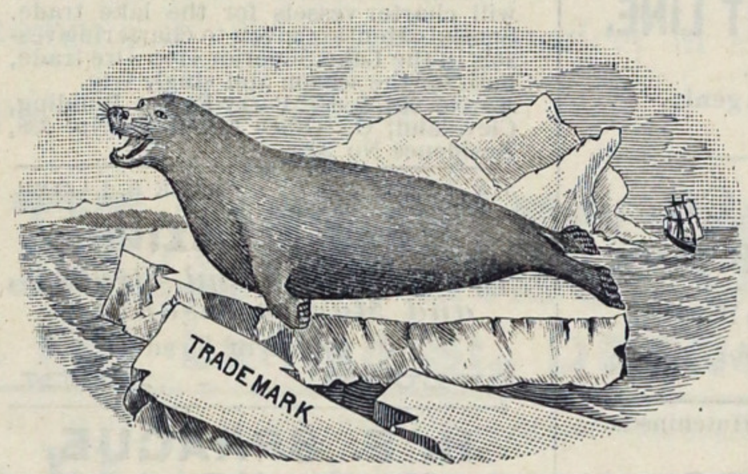

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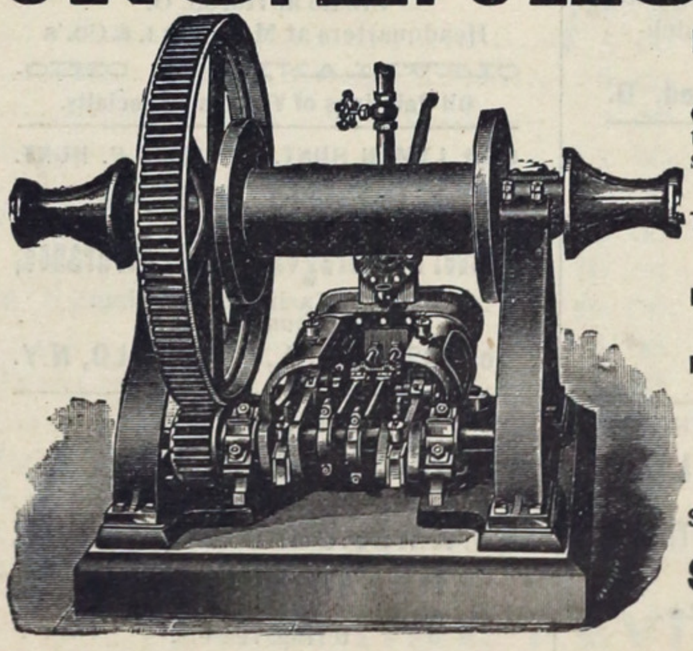

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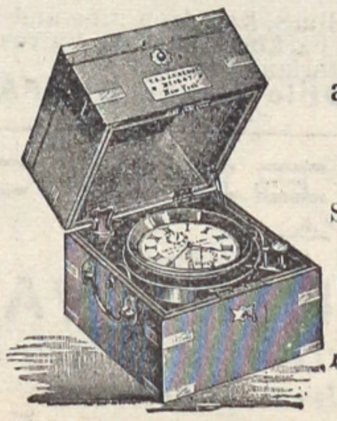

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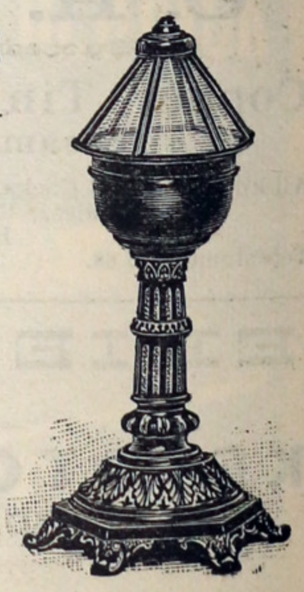

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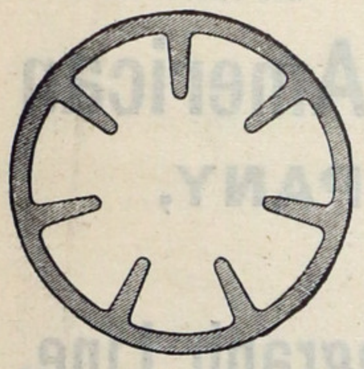

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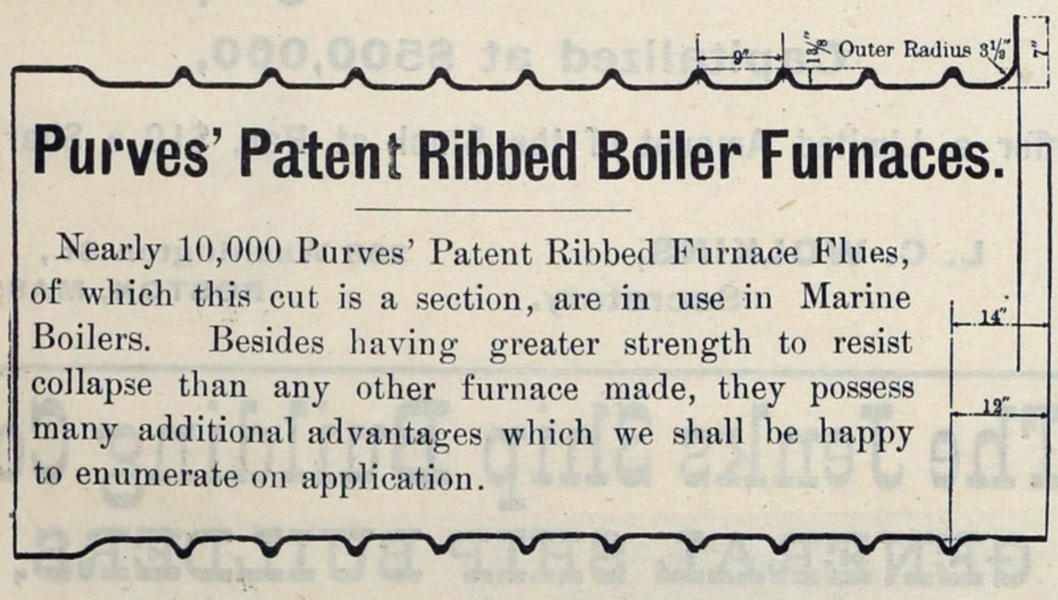

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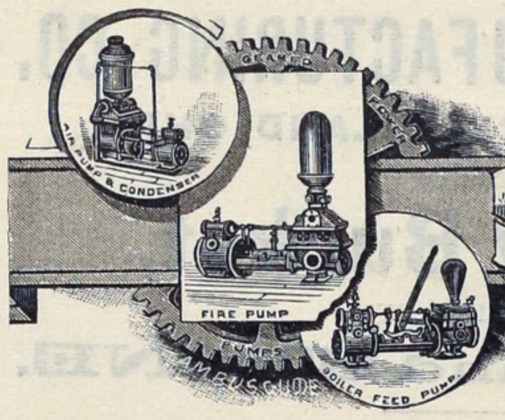

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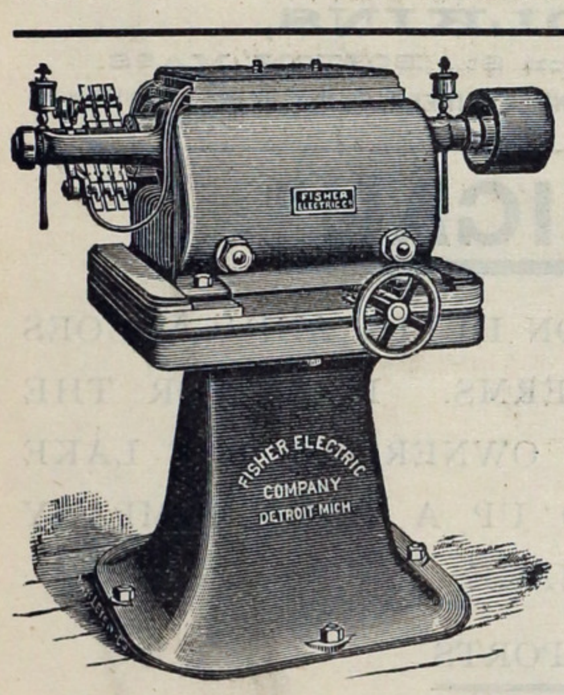

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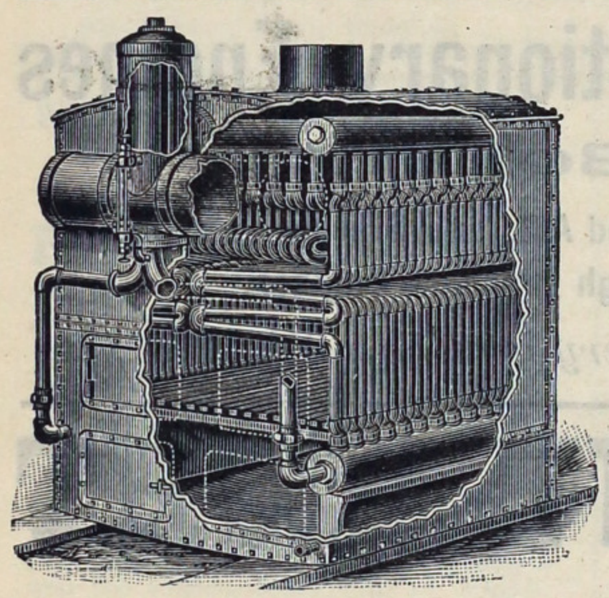

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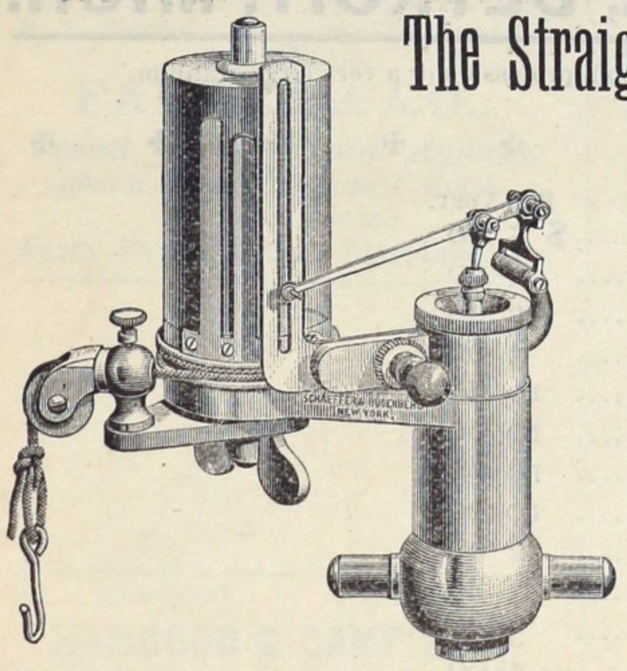

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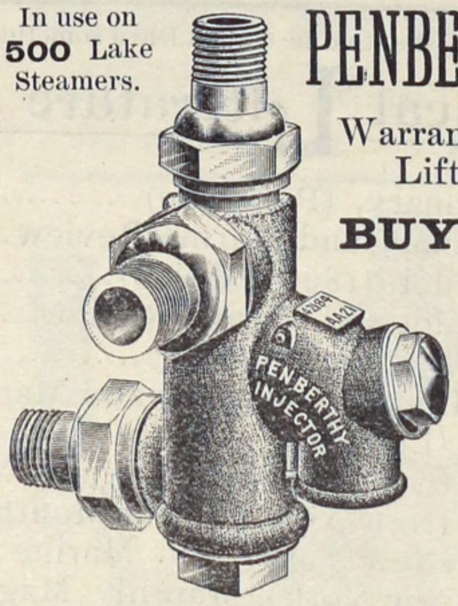

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